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THE

ANNUAL STATISTICS

OF

MANUFACTURES.

—
1899.
—

FOURTEENTH REPORT.

—
BOSTON :
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1900.

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1899

Commonwealth of Massachusetts.

BUREAU OF STATISTICS OF LABOR,
ROOMS 250-258 STATE HOUSE,
BOSTON, AUGUST 31, 1900.

TO THE HONORABLE SENATE AND HOUSE OF REPRESENTATIVES:

I have the honor to transmit, herewith, the Annual Statistics of Manufactures for the year 1899, which have been collected and are presented in compliance with Chapter 174, Acts of 1886.

The direct charge of the Special Agents and clerical force in the Division of Manufactures of this Department, wherein this report is prepared, is entrusted to Mr. Frank H. Drown, Second Clerk of the Bureau, and I wish to record my appreciation of the faithful and painstaking manner in which he has performed the duties devolving upon him. Mr. Charles F. Pidgin, First Clerk, as in previous years is entitled to acknowledgment for his assistance in the general executive work of the Bureau.

Very respectfully,

HORACE G. WADLIN,
Chief.

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PART I.

INDUSTRIAL CHRONOLOGY.
1899.



PART I.

INDUSTRIAL CHRONOLOGY—1899.

Abington. In January, C. H. Alden & Co., shoes, moved here from Middleborough. — During the year, L. A. Crossett, shoes, built an addition to plant, 78 x 35 feet, 4 stories; M. N. Arnold & Co., shoes, an addition to office; W. J. Sheehan, confectionery, an addition to factory; and A. C. Woodward enlarged plant by a building 40 x 50 feet, and added new looms.

Acton. In September and November, explosions wrecked mills of American Powder Co.

Adams. In February, Greylock Shirt Co. ran on short time; in July, resumed on full time; in August, added new machinery and manufacture of colored shirts; in September, shut down 2 hours on account of accident to machinery. *March.* Berkshire Cotton Manufacturing Co.'s card room in No. 1 mill damaged by fire; in April, wages increased; in May, began construction of new mill to contain 105,000 spindles; the President of the United States laid the corner stone, and in December the mill was dedicated by a ball; in the latter month, increased wages. *April.* L. L. Brown Paper Co. added new machinery. *May.* Hunter Machine Co. shut down on account of broken shafting; later, local plant shut down permanently; in December, purchased a tract of land, for extension of its North Adams plant, and also the old Allen foundry, using the latter for special work. *July.* Renfrew Manufacturing Co. added new chain quiller; in September, made repairs; in October, equipped plant with electric lights; in November, ran several departments nights; and at different times during the year added 150 new looms. — W. C. Plunkett & Sons added new spooler and quiller. *September.* Adams Bros. Manufacturing Co. equipped plant with electric lights; in November, ran nights. *November.* Adams Marble Co. shut down on account of dull trade. — Graham, Clark, & Co. leased the Windsor Falls Manufacturing Co.'s mill at Arnoldsville to manufacture cassimeres and chevots; work of remodeling begun. — Norcross Bros. leased marble quarry at Zylonite.

Agawam. In January and July, the Worthy Paper Co. shut down for repairs and stock taking. — In May and August, Agawam Co. shut down for repairs; in October, equipped plant with electric lights and ran weave room nights; in November, ran nights. *December.* Repairs on the Porter distillery completed.

Alford. In May, W. H. Gross of Lee began operating quarry under name of Berkshire Marble Co.

Amesbury. In January, Walker Carriage Co. started trimming department and added blacksmiths. *February.* A. L. Lewis & Co., increased capacity and incorporated as the A. L. Lewis Co., authorized capital \$7,000. — Briggs Carriage Co. worked nights; in August, purchased adjoining property. *March.* Adam Scott added new roller to his grist mill. — Plants of Currier-Cameron Co. and Lockwood & Brown damaged by fire. *April.* New wage schedule went into effect at Hamilton Woollen Co.; in July, shut down portion of plant owing to scarcity of help; in November, added 86 new looms; in December, increased wages. — Fur finishers at Merrimac Hat Co. struck for an increase; fur department shut down and in 10 days strikers returned at old rates; in May, ran nights; in August, shut down one week for repairs; in September, leased factory in Newburyport and established branch. — S. R. Bailey & Co., carriages, ran nights. *June.* Electric Light Co. began addition to plant, 24 x 30 feet. *July.* Roscoe Merrill's sawmill damaged by fire. *September.* Amesbury Automobile Co. incorporated, authorized capital \$150,000. — Curran, Burke, & Co. leased new factory building. *October.* Lockwood & Brown sold wheel plant to Carr & Prescott and hereafter will confine their business to putting on rubber tires. *November.* Pneumatic Carriage Co. retired from business; no successor. — Fire damaged carriage factory of Chas. Rowell & Son.

Carriage shipments. In the following table is shown the number of carriages shipped by rail during 1899, as compiled by the *Amesbury News*, in comparison with the shipments for 1897 and 1898:

MONTHS.	1897	1898	1899	MONTHS.	1897	1898	1899
January, . . .	143	235	157	August, . . .	360	447	427
February, . . .	263	331	294	September, . . .	333	379	349
March, . . .	1,214	1,325	1,038	October, . . .	329	367	338
April, . . .	1,767	1,362	1,378	November, . . .	283	275	296
May, . . .	1,516	1,157	1,702	December, . . .	224	212	233
June, . . .	1,177	956	1,256				
July, . . .	581	586	600	TOTALS, . . .	8,190	7,632	8,068

Comparing 1899 with 1898, the increase in number of carriages shipped by rail is 436, or 5.71 per cent.

Andover. In January, Wm. A. Russell, retired paper manufacturer, died, aged 68 years. *May.* Tyler Rubber Co. discharged several hands owing to lack of work. *August.* J. P. Bradley & Co.'s woollen mills shut down for one month. *September.* Stevens Mill introduced electric lights. *November.* Henry F. Edwards, brush manufacturer, died, aged 51 years. *December.* Tuttle & Olmstead completed addition and added new machinery. — Marland Mills damaged by fire.

Ashburnham. In February, chair factory of B. Duane & Co. destroyed by fire. *October.* Chair factory of Allen-Thompson-Whitney Co. destroyed by fire; town voted to abate taxes for 10 years if company would rebuild; company dissolved.

Ashland. In October, mill of Warren Thread Co., which had been purchased by the American Thread Co. in June, closed its doors permanently; notices were posted that employes would be given wages until Jan. 1, 1900, and given employment elsewhere in the different factories of the company so far as possible.

Athol. In January, Adin H. Smith, retired brick manufacturer, died. *February.* C. M. Lee's Sons, shoes, made repairs; in May, pullers-on struck for increase—granted; later, trimmers struck; in December, lasters struck. *March.* Diamond Match Co. increased capacity. *April.* Bennett & Van Valkenberg, cotton yarns, closed permanently; Mr. Bennett's interest in property sold to L. S. Starrett Co. who occupied portion of plant for manufacture of tools; in July, L. S. Starrett sold his interest in his cutter department to Gay & Ward; the latter bought the old Cherry Mill property and in October began erection of three-story building, 60 x 200 feet. *May.* Spinners at Millers River Manufacturing Co. struck over disagreement in method of payment; management promised general wage revision June 20, and strikers returned; later, spinners struck against overseer; plant shut down; in October, new boiler house, 22 x 32 feet, completed. *June.* J. W. Goodman's Sons incorporated as Goodman-Leavitt-Yatter Co. *December.* Geo. Cragin's lumber mill destroyed by fire.

Attleborough. In January, Daggett & Clap, jewelry, succeeded by Daggett & Clap Co., incorporated under Maine laws. *April.* Weavers and loom fixers of Hebron Manufacturing Co. struck for increase; portion of strikers returned; later, all went out; in May, returned, accepting one per cent advance; in November, added new spinning frames; in December, increased wages. — Mossberg Manufacturing Co. began manufacture of bicycle bells. — Nelson Carpenter, jewelry manufacturer, died; business closed out; no successor. *May.* Molders at Howard & Bullock's machine shop struck on orders from Rhode Island Molders Union. *July.* J. E. Blake Co., jewelry, ran nights, and night work obtained more or less generally for the remainder of the year in this and other jewelry manufacturing establishments; in October, manufacturing jewelers protested against what they termed interference on the part of the District Police in their business, so far as it related to working overtime. *December.* Watson & Newell discontinued usual Saturday half-holiday owing to rush of orders. — Curtin Jewelry Co. began manufacturing.

Auburn. In April, Stoneville Worsted Co. sold to Wm. J. Hogg of Worcester, who, in November, sold it to the Worcester Carpet Co. *September.* Chas. C. Holland, former yarn manufacturer, died.

Avon. In March, shoe factory of L. G. Littlefield shut down, resuming in April. *December.* Cable Cycle Co. equipped plant with electric lights.

Ayer. In January, Sigsbee Manufacturing Co. shut down 4 weeks and in July for the same length of time for stock taking and repairs. *March.* Ayer Tanning Co. shut down for repairs; in June, completed new boiler house and set up two new boilers; in November, enlarged its beam room. *September.* W. T. Piper Co. started work on season's cider and vinegar. *October.* Bay State Rim Co., bicycle rims, succeeded by K. & C. Manufacturing Co.

Barre. In January, Barre Shoe Co. increased force and ran overtime; in August, started up at 6.30 A.M. each day in order to give employes Saturday half-holiday. *June.* J. Edwin Smith, cotton goods manufacturer, died, aged 67 years; in October, mill property sold to White Bros. Manufacturing Co. *November.* Harding Allen completed addition to his rake factory.

Bedford. In July, Fairbanks-Boston Rim Co. went out of business; no successor.

Bellingham. In September, Taft, Murdock, & Co. shut down for repairs. *October.* American Woollen Co. sold the Ray Woollen Mills to W. E. Hayward & Co. of Douglas who, with others, were incorporated as Charles River Woollen Co., authorized capital, \$150,000. *December.* Addition built to Red Mill of Norfolk Woollen Co.

Bernardston. In July, saw and grist mill of Chas. S. Barber destroyed by fire; rebuilt.

BEVERLY. In January, Millett, Woodbury, & Co. removed branch shoe factory at Ipswich to this city and admitted Geo. E. Rowe to partnership. — Miller & Taylor established to manufacture innersoles; in March, out of business; no successor. — A. W. Curtis & Co., shoes, dissolved; Curtis & Lee succeeded. — J. H. Baker & Co., shoes, dissolved; J. H. Baker continued. *February.* Consolidated & McKay Lasting Machine Co. absorbed by a combination incorporated under New Jersey laws as the United Shoe Machinery Co., authorized capital \$25,000,000. — Brown & Denning, shoes, moved to Marblehead. *May.* Smith & Paranteau, heels, dissolved; A. Paranteau continued. — E. P. Fowle & Co., shoes, moved here from Danvers. — Shoe cutters of Woodbury Bros. struck for increase. — Fire damaged plants of Lawrence Enamel Bobbin Co., D. A. Kilham & Co., boxes, and Whitman Manufacturing Co. *June.* F. A. Seavey & Co., shoes, dissolved; John W. Carter Shoe Co. succeeded. *July.* Murray, Cone, & Co., shoes, purchased Lynn plant and moved machinery to this city; in December, increased wages of cutters. *August.* Harris L. Walker, retired shoe manufacturer, died, aged 57 years. *September.* Bay State Boot & Shoe Co. retired from business; no successor. *November.* J. P. Friend & Co., boxes, consolidated with Arthur W. Copp of Salem under name of Friend-Copp Co.; business moved to this city.

BillERICA. In January, portion of addition to Talbot Mills, begun in October, 1898, completed. In February, with other mills and factories, shut down owing to severe snow storm; in May, shut down to install new set of boilers resuming on full time with full force; in August, shut down for two weeks vacation resuming in September; in November, put in new elevator; in December, built extension to storehouse. *May.* Employes of Lowell Rendering Co. struck for increase; not granted.

Blackstone. In January, Waterford Mill No. 1, purchased by Chas. Fletcher in March, 1898, started up after a shutdown of five years; mill had been entirely refitted with modern machinery. — J. M. Donohue, satinets, shut down indefinitely; in April, after repairs, started up; later, shut down, starting again in October. *March.* Millville factory of Woonsocket Rubber Co. shut down for repairs resuming after six weeks, and in September ran nights. — Skein winders at Saranac Worsted Mills struck for increase; settled by compromise; in April, spoolers struck, followed by other departments causing mill to shut down; later, demands granted and work resumed; in July, ran nights, and 20 weavers struck over wages paid, causing another shutdown; in December, added new looms. *May.* Fred Davis bought the Ironstone Mill; repairs made and mill started up in June.

August. Blackstone Spinning & Dyeing Co. leased the old mill of Cornelius R. Day; alterations and repairs made and started up in September. — Blackstone Manufacturing Co. shut down 2 days owing to accident to machinery; in December, increased wages.

BOSTON. In January, Judge Wentworth of the Municipal Civil Court, in the cases of Patrick McHugh and 17 others against City of Boston, decided that a laboring man had a lien against a city or town for work done on the streets, holding that the building of a public street was a public work within the meaning of Chap. 270, Acts of 1892, and that a public street can be considered as owned by the city inasmuch as the city exercises complete control over it and lets the contract for its construction. — Pearson Mill of Standard Rope & Twine Co. started after being shut down since August, 1897. — S. G. Parker, soda water manufacturer, died, aged 70 years. — New England Paper Box Manufacturers Association and National Wool Manufacturers Association held their annual meetings. — Graham & Co., shoes, dissolved; Graham Shoe Co. succeeded. — Chipman-Pratt Co. incorporated to manufacture shoes; authorized capital \$30,000. — New city refuse utilization plant put in operation. — Boston Carpet Slipper Co. removed to larger quarters. — Employés of Union Rubber Co. struck owing to change in method of payment. — Wheeler Cable, president Cable Rubber Co., died. — C. Edward French, distiller, retired from business; no successor. — National Boiler Works closed; no successor. — Fires for month: Boston offices of Chick Bros., Haverhill; Field-Hazzard Co., Brockton; Felch Bros., Natick; J. W. Russ Co., Haverhill; Bradley, Hagney, & Leonard, Randolph; and J. A. Lynch, Geo. B. Case, T. F. Loring, Donovan & Pierce, W. H. Small, Packard & Field, G. E. Hall & Co.; also Hub Manufacturing Co., H. J. Kramer, Boston Counter Co., Boston Thread & Twine Co. (storehouse), Columbian Engraving Co., Martin Oberhauser, cutlery, and John Shaw & Co., chemicals.

February. Doe, Hunnewell, & Co., furniture, retired from business. — Fires for month: G. F. Caller, tannery; Norfolk Manufacturing Co., soap; A. F. McCann, brass and iron foundry; Chicago Picture Frame Co.; and Henry F. Miller & Sons, piano warerooms. — C. W. Coop Plano Co. moved from Taunton to this city. — Rubber Tire Wheel Co. succeeded by C. S. Mersick & Co. *March.* Eppler Welt Machine Co. transferred to Goodyear Shoe Machinery Co. — Atlantic Works, East Boston, installed a newly-patented compressed-air plant for use on steamship repairs. — Engineers at Franklin Brewery struck. — Fires for month: Geo. Brown & Bro., mattresses; I. H. Wiley & Co., paints; F. G. Newton, sashes and blinds; Gallagher & Co., screens; W. L. Wetherbee, furniture; H. C. Parker, screens; and Edgar P. Lewis, confectionery. — Kidder Press Manufacturing Co. succeeded by Kidder Press Co. *April.* National Sewing Machine Co. absorbed by National Machine & Tool Co. — Roxbury Carpet Co. shut down one day owing to small-pox scare among employés. — Workmen at Fort Warren struck, refusing to handle stone prepared by non-union labor. — New England Cotton Manufacturers Association held its annual meeting. — Geo. H. Dickerman of G. H. Dickerman & Co., paper boxes, died. — Fires for month: John Bowditch, tannery; Hovey & Harvey, art novelties; Joseph F. Carew, stone works; C. J. Peters & Sons, electrotypers; Oliver H. Lufkin, printer; Adams & Jones, boilers; and New England Screw Co. *May.* Globe Buffer Co. brought out new machine called the Columbus two-speed brush machine. — Boiler exploded at plant of Brookline Gas Co. — Molders strike went into effect in this city and the State affecting every establishment where union molders were employed; the strike was for the nine-hour day and was generally successful. — Explosion of refrigerating pipe damaged brewery of A. J. Houghton Co. — B. F. Sturtevant Co. added another story to each of two shops. — Pierce & Son, shoes and slippers, retired from business; no successors. — A. H. Stuart & Co. incorporated under Maine laws as Stuart Piano Co. — Fire damaged plant of H. A. Lebar, cloaks. — David Welch started a finishing plant. — F. E. Merriam, corset bone, sold to Geo. A. Dodge.

June. Plasterers' Tenders Union ordered a strike owing to refusal of master plasterers to grant a Saturday half-holiday without loss of pay; 14 firms granted the demand. — Employés of E. L. Drisko, printer, struck for reduction in hours. — Electric Cigar Co. sold to N. Estevez. — J. B. West Co., builing wheels, succeeded by F. L. & J. C. Codman. — Cigar manufacturers of Boston, 155 in number, advanced wages voluntarily. — Robert C. Billings, of Faulkner, Page, & Co., died, aged 80 years. *July.* Machinists Union enjoined by Courts from interfering with the non-union employés of Kidder Press Co.; this was one of the firms which resisted the demands of the Molders Union. — F. M. Stevens & Co. sold to Boston Shoe Tool Co. — Frank W. Dyer & Co. dissolved; F. W. Dyer continued. — Joseph Measures sold to Non-Corrosive Metal Co. — Chas. Restien, picture frames, sold to R. Shulman. — Cigarmakers at Waitt & Bond's factory struck over differences in regard to work; later, adjusted, and work resumed. — Engi-

neers on new Music Hall struck over hours and pay. — Fires for month: Perkins Wood-working Co., sashes, etc.; Library Bureau, supplies; J. D. McClellan, office fixtures; F. S. Williams, cabinet maker; H. Traiser & Co., cigars; Samuel Orr, hats; and the old Bay State Rolling Mills; the latter were totally destroyed; this was one of the oldest rolling mills in the country and during the Civil War produced much of the iron used in the construction of the old monitors; the plant had been idle for a number of years and was used as an oil-storage house. *August.* Thos. G. Plant Co. voted to increase capital stock from \$150,000 to \$450,000. — Henry C. Noble, wrappers, retired from business; no successor. — John A. McKie purchased buildings and land occupied by him as a shipyard in East Boston. — Cutters employed by W. S. Lyons, granite, struck. — E. Howard Watch & Clock Co. started temporarily under supervision of trustees. — Fires for month: Standard Rope & Twine Co.; C. E. Greenman, shoes; and Boston Fire Brick Co. — Foundation started for new factory for Thompson-Norris Paper Box Co. at Brighton.

September. Steam Fitters' helpers struck for increase; generally successful. — Standard Bottling & Extract Co. granted charter of incorporation; authorized capital, \$20,000. — Fires for month: B. Spinoza & Co., cigars, and Highland Foundry Co.

October. Louis Prang presented many of the originals of his famous lithographs to the Boston Public Library. — Boot and shoe manufacturers of America held a convention. — Mack Injector Co. retired from business; no successor. — Simmons & Co., clothing, sold business; no successor. — Diamond Match Co. discontinued local plant. — A. L. Perkins Co. and Globe Shoe Tool Co. absorbed by the Boston Shoe Tool Co. — Edward B. Parker, baker, sold to Wm. Canavan. *November.* Acme Silver Plate Co. retired from business; no successor. — Tobacco strippers at Henry Traiser & Co.'s factory struck for increase and better system of weighing; granted. — Henry H. Rueter, president of the United Association of Brewers, and one of the best known Boston brewers, died, aged 67 years. Mr. Rueter was born in Germany and came to this country in 1851. In 1867, he founded, with others, the Highland Spring Brewery under the firm name of Rueter & Alley; in 1885, Mr. Alley withdrew and the name was changed to Rueter & Co. — Geo. H. Chickering, last male survivor of the founders of the piano-manufacturing house of the name, died, aged 70 years. — Fires for month: Vega Musical Instrument Co.; Gardiner, Knapp, & Co., patterns; Wm. H. Griffiths, models and patterns; F. M. Willey, bicycle repairer; Victor Beauregard, machinist; E. C. Barnshaw & Co., furniture; W. B. Badger & Co., desks; Ed. R. Holt, plater; G. A. Walker Machine Co.; H. M. Marshall and Chandler & Johnson, printers; Surprise Nickel Plating Co.; Fashion Waist & Skirt Manufacturing Co.; J. & J. W. Marshall, slippers; A. B. & G. L. Shaw, furniture; and Codman & Shurtleff, surgical instruments. — Merrill Piano Manufacturing Co. absorbed business of Merrill Piano Co. and of Norris & Hyde, and moved to Lawrence. *December.* E. Hodge Boiler Works purchased Pigeon's spar yard and plant, in East Boston, and began remodeling. — Pearl & Lombard Co. incorporated to manufacture leather; authorized capital, \$15,000. — B. F. Sturtevant Co. erected an addition for use of its electrical department. — New England Granite Manufacturers decided to refuse the demands of the Granite Cutters National Union for decrease in hours of labor and increase in wages. — Journeyman roofers struck for eight hours with no loss of pay; granted. — Lasters at Thos. G. Plant Co.'s factory struck over wages paid; later, welters joined the lasters. — Employés of Co-Operative Rubber Co. struck for increase; granted. — Press feeders struck for increase in wages; granted, except in case of University Press. — Eugene H. Richards, manufacturing jeweler, died, aged 56 years. — C. C. Briggs, president Briggs Piano Co., died, aged 75 years. — Fire damaged plants of A. F. Leatherbee Lumber Co., Blacker & Sheppard, and piano factory of Hallet & Davis.

During the year, H. Traiser & Co. enlarged their cigar manufacturing plant. — F. H. Topham, gloves and mittens, moved business to New Hampshire. — Blanchard Machine Co. incorporated as The Blanchard Machine Co. — A. N. Cook, fur goods, succeeded by Newell C. Cook, continuing under old firm name. — Andrew Blyth succeeded to F. A. Mitchell, baker. — W. U. Lewissan sold to Excelsior Umbrella Manufacturing Co. — F. S. Williams, mouldings, sold to Thos. Unlacke.

Boylston. In April, branch mill of Lancaster Mills of Clinton, torn down; part of machinery removed to Clinton, balance broken up. *July.* Carpenters employed by local contractor struck; places filled.

Braintree. In May, John C. Trott Co. incorporated to manufacture medicated and absorbent cotton; authorized capital, \$15,000; building erected on site of old bleachery. *July.* Allen Fan Co. sold to Ignaz Strauss Fan Co. of New York; local plant remained in operation. *September.* Fore River Engine Co. shut down owing to difficulty with work-

men over discharge of a foreman; settled satisfactorily. *November.* Portion of Victor Metal Foundry Co. destroyed by fire. *December.* D. B. Closson & Co, shoes, started winter season on 10-hour schedule.

Bridgewater. In January, Eagle Cotton Gin Co. shut down to connect steam pipes with newly completed addition; in September, shut down 2 days for repairs. *December.* H. J. Miller added manufacture of steel shanks.—Bridgewater Iron Works sold to Stanley Iron Works of New Britain, Conn.—Shawmut Lead Co. completed erection of new buildings and remodeling of vacant Carver Cotton Gin Co.'s plant, preparatory to beginning operations.

BROCKTON. In January, union label adopted at several shoe factories and during the year its acceptance was quite general. — Brockton Welting Co. added new machinery; in March, began addition, 20 x 46 feet, to factory recently purchased. — Tack machinery and fixtures of Barrows & Greeley sold at auction. — M. A. Packard & Co., shoes, ran nights; in September, installed electric light plant. — D. W. Field, shoes, added new boiler; in November, shut down for repairs; in December, sold his interest in the Field-Hazzard Co. and incorporated his own firm as the D. W. Field Co.; authorized capital, \$100,000. — W. L. Douglas Shoe Co. completed and occupied new factory; in February, shut down one afternoon owing to accident to machinery and ran several departments nights; in March, fire damaged plant; in May, work begun on another addition, 70 x 25 feet; in June, cutting room shut down for 2 weeks vacation; in October, another addition begun, 47 x 110 feet, 5 stories; in December, added another story to west wing. — Geo. E. Keith Co. ran irregularly owing to sickness among employes; in March, lasters struck but were ordered back by Union; in May, completed engine connections with new No. 2 factory; in June, No. 1 factory shut down temporarily owing to break in water pipe; in November, made annual agreement with lasters.

February. A general shutdown occurred in all the factories on account of the severe storm, and later, owing to a shortage of coal. — Field-Hazzard Co. shut down temporarily on account of broken water pipe which delayed work in bottoming room; in May, shut down for stock taking; in June, began work on addition to factory; in October, equipped plant with electric lights; in November, shut down for stock taking and repairs to boiler plant. — Snell & Atherton shipped shoe tools to New Zealand; in May, shipped goods to Germany and Australia; in July, shut down 2 weeks for stock taking. — O. A. Miller, boot and shoe trees, shipped goods to Germany. — Sleeper Patent Flexible Innersole Co., late of Detroit, Mich., moved plant to this city; in May, increased force; in November, removed to Boston. — Several operatives suspended at Hub Gore Works owing to scarcity of cotton warp. — Smith & Goss established manufacture of shoe trimmings; in March, ran nights; in July, dissolved; Wm. G. Smith continued. — Oakman & Low dissolved; Starratt, Higgins, & Oakman succeeded.

March. The Lynn Shoe Co. of Montreal, Canada, hired a number of local operatives to teach its employes to make the "Brockton Shoe." — Small, Nesmith Co. moved into larger quarters. — Crafts, Harrington, & Co. increased capacity of plant. — Field Bros., shoes, damaged by fire. — F. C. Kingman & Co. shoes, damaged by fire; in August, increased capacity. — M. P. Clough & Co. resumed operations for season's run; in November, dissolved; succeeded by Slater & Morrill. *April.* Crawford Shoe Makers shut down for few days. — Brockton Stay Co. placed new leather vamp-stay on market. — Brockton Blacking Co. and W. H. Murphy & Co. consolidated under name of Trolley Shoe Polish Co. — Myron F. Thomas, shoes, shut down owing to leak in boilers. — Preston B. Keith Shoe Co. shut down for stock taking; in August, shut down owing to accident to machinery; in November, factory damaged by fire. *May.* Factory of Geo. H. Stevens Shank Co. damaged by fire. *June.* Carpenters and laborers employed at new bicycle race track struck for non-payment of wages; settled by acceptance of stock in the association at \$10 per share in lieu of wages. — Brockton & Eureka Box Toe Co. moved into larger quarters. — W. P. Kingman Shoe Co. organized to succeed to business of A. M. Herrod.

July. All the large shoe factories shut down over the 4th. — F. E. White Co. shut down for repairs and Packard & Field and People's Co-operative Shoe Co. for stock taking. *August.* Whitman & Keith set up new edge-setting machine, the irons of which were heated by electricity. — Columbia Goring Co. sold to Chadbourne & Moore of Chelsea, and machinery and stock moved to that city. *September.* James L. Grew, shoe tool manufacturer, died, aged 64 years, following the death of his partner; in October, business closed out; no successor. *October.* Mulligan & Drislane, box toes, moved into larger quarters. — Condon Bros. & Co. organized to manufacture shoes. — C. A. Bloomingdale

leased portion of Monarch Rubber Co.'s plant to manufacture rubber boots and shoes. — Fire damaged plants of Brockton Die Co., N. R. Packard & Co., and J. A. Roarty. — E. & L. C. Keith, shoes, purchased factory formerly occupied by E. E. Taylor & Co., to be known as No. 2 factory, and started work in November. — F. M. Shaw & Son's factory damaged by fire; in November, moved its naphtha tanks to land recently purchased; in December, began erection of new factory. *November.* March Bros., motor carriages, leased the Kingman factory preparatory to manufacturing. — E. E. Taylor & Co. purchased factory which they had occupied during past year; completed addition, and in December, started operations. — Vampers employed by L. M. Reynolds & Co. struck owing to reduction of wages; later, settled by compromise. — C. B. Gould established manufacture of shoes. — C. A. Eaton & Co. shut down for 3 days' vacation. *December.* Pioneer Co-operative Shoe Co. started on new run after a shutdown for repairs. — McCarthy, Sheehy, & Kendrick, shoes, shut down for stock taking. — Packard & Field retired from business; no successor. — Golden & Corcoran succeeded by Golden Shoe Co. — Wm. H. Cary of The Brockton Last Co., died, aged 47 years.

Shoe shipments. The number of cases shipped during 1899, as compiled by the *Brockton Enterprise*, is presented in the following table, comparison being made with the shipments for the 5 preceding years:

MONTHS.	1894	1895	1896	1897	1898	1899
January,	25,975	35,238	33,465	28,249	38,818	35,476
February,	30,591	37,006	36,110	37,417	38,510	41,998
March,	47,586	48,416	40,556	40,038	46,576	66,524
April,	39,642	42,734	42,150	49,834	57,015	46,544
May,	37,801	49,709	51,242	33,113	36,218	40,378
June,	40,187	37,370	31,681	24,991	29,041	40,254
July,	21,940	28,914	30,455	30,383	38,672	31,732
August,	38,864	43,056	33,100	39,265	43,187	45,944
September,	33,473	35,073	40,029	41,033	56,121	62,563
October,	35,861	30,915	43,787	45,678	31,299	43,170
November,	41,301	35,805	28,850	37,637	39,748	37,168
December,	30,815	20,527	22,950	34,112	36,769	37,526
TOTALS,	424,036	444,763	434,375	441,750	491,974	529,277

The increase in 1899 over 1898 was 37,303 cases, or 7.58 per cent. On the basis of 22 pairs to a case, there were shipped during 1899, 11,644,094 pairs.

Brookfield. In February, shoddy mill, near East Brookfield, rebuilt preparatory to being used as a part of the plant of Mann & Stevens Woollen Co.; in April, ran on full time; in May, fitted up one of its rooms for use of local hose company; in June, ran part of each week with one half the machinery; later in month, resumed on full time. — John Clancy completed removal of his plant from Holliston as noted in this Chronology for 1898; 15 men at work at close of month; in April, increased force; in July, shut down 3 days for vacation; in November, shut down for 3 days. *March.* Injunction restraining John J. Pew of Gloucester from selling real estate of Parmenter Manufacturing Co. dissolved; brick yard put into shape for opening of season, to be run in the interest of Mr. Pew who gave bond for \$50,000 to be permitted to conduct the business; in May, 2 striking machines started; wages reduced. *April.* Chas. H. Moulton & Co., shoes, shut down for stock taking, resumed with full force of cutters; in July, shut down 3 days for vacation; in September, made changes in character of machinery; in October, shut down cutting room owing to over production; in November, shut down for one day. *May.* Henry D. Fales, retired shoe manufacturer, died, aged 86 years. *December.* Fire damaged woollen mill of Winfield Scott & Co.; temporary shutdown occurred for repairs.

CAMBRIDGE. In February, 30 pattern makers at the Geo. F. Blake Manufacturing Co. struck because firm failed to recognize Union; settled by an agreement that none but pattern makers holding paid-up membership cards would be given employment and time

and one-half to be paid for all overtime with double pay for Sundays; in May, molders struck. *March.* American Rubber Co. shut down 2 weeks for vacation. *April.* Fires for month: Bay State Metal Works, Duff Spring Co., Massachusetts Fan Co., Mellen Ornamental Co., and Riverside Boiler Works, latter rebuilt and operations begun in October. *June.* Boston Woven Hose & Rubber Co. reorganized with authorized capital of \$1,200,000. — Nolan Cane-Umbrella Co. sold to Milford (Conn.) Manufacturing Co.; stock and machinery moved. — Harvard Piano Co. closed business and moved to Dayton, Ky. *August.* Liquid Air, Power, & Automobile Co. purchased building for manufacturing purposes. — Morse & Whyte began construction of three buildings, completed in December. *October.* Geo. W. Seaver, president Seaver Piano Action Co., died, aged 80 years. — Fire damaged barrel factory of Goepper Bros. Co. *December.* University Press increased wages; press feeders struck for more pay but demands were not granted. — Joshua Lincoln, an old time publisher from 1829 to 1874, died, aged 85 years.

Canton. In July, Kinsley Iron & Machine Co. shut down for repairs; discharged help and issued notice to the effect that those wishing to continue at work should, on or before July 9, give notice and sign contract containing new wage schedule and regulations.

Charlemont. In September, Frary Manufacturing Co. unable to run regularly owing to low water.

Charlton. In February, Akers & Taylor, cassimeres, ran on three-quarters time. *September.* J. O. Copp, satinnet manufacturer, killed on the railroad at Uxbridge.

Chelmsford. In January, new engine added to worsted plant of Geo. C. Moore. *April.* Dutton Bros., meal, sold to H. C. Sweetser. *July.* Silver & Gay Co.'s machine shop and Geo. C. Moore shut down for 3 days each. *September.* Success Worsted Co. started up 28 looms and installed new finishing machinery.

CHELSEA. In January, shoe factory of C. F. Kelly & Co. damaged by fire. *April.* L. C. Chase & Co. sold to International Automobile & Vehicle Tire Co. — Glaziers employed by Magoun Leather Co. struck; places filled. — United States Foundry shut down indefinitely. *May.* L. Richardson & Co.'s oil refinery destroyed by fire. *August.* Chadbourne & Moore purchased stock and machinery of Columbia Goring Co. of Brockton and moved it to this city. *November.* Wm. A. Shaw & Co., stable fittings, of Boston, purchased plant for occupancy, Jan. 1, 1900. *December.* Leonard & Ellis began construction of one-story addition, 27 x 30 feet, to their oil factory.

Cheshire. In January, 3 kilns of Farnum Bros. Lime Co. started on full time after a shutdown of several weeks. *March.* Berkshire Glass Sand Co. shut down indefinitely owing to business complications; in June, plant taken by Cheshire Glass Manufacturing Co., incorporated with authorized capital of \$50,000 to manufacture glass bottles; in July, began remodeling factory; in September, started with 60 employes; in November, shut down to rebuild foundations of tank which had dangerously settled.

Chester. In January, fire damaged plant of Hampden Emery & Corundum Co.; in February, a second fire caused further damage; mill had been running day and night; in March, repairs made and No. 1 mill began operations; in June, set up new boiler; in July, engine broke down, plant shut down until August when new engine was installed; in October, strike occurred among miners; places filled. *March.* Berkshire Granite Co. absorbed by Bowe Granite Co.; in May, new stone sheds and engine house built, and extension of plant begun; completed and in full operation in September; in December, completed contracts and shut down for season.

Chesterfield. In April, basket factory ran night and day to fill orders.

CHICOPEE. In January, owing to the prevalence of La Grippe, the various mills and factories were obliged to shut down in part. — Taylor-Bramley Co., knit goods, shut down 2 weeks for repairs and stock taking. — Employes in the frame, filling, and braising rooms of the bicycle department of the Lamb Manufacturing Co. were discharged temporarily owing to overproduction; in April, ran nights. *February.* Olmstead & Tuttle Co. began erection of new plant for manufacture of quilts, horse blankets, etc., in addition to present product; capital stock increased to \$350,000. — Dwight Manufacturing Co. extended manufacture of men's suitings first begun in 1898, also added new looms; in

June, storehouse damaged by fire; in December, increased wages. *March.* Willimansett Brick Co. added new boiler and made general repairs. — Overman Wheel Co. ran several of its departments nights; in April, continued overtime work; in November, fire damaged part of No. 2 factory. *April.* Chicopee Manufacturing Co. increased wages and ran Saturday afternoons; one of the picker rooms damaged by fire; in May, repaired raceway and canal wall which had caved in in April, and ran carding rooms overtime; in June, shut down for stock taking; in December, increased wages. — Beston & Kelly, bricks, completed new plant; old drying racks sold to Willimansett Brick Co.; in June, fire damaged kiln sheds. — Spaulding & Pepper Co. ran nights on chainless bicycles. *May.* Blacksmith shop of Belcher & Taylor Agricultural Tool Co. damaged by fire. *July.* Burtworth Carpet Co. of Springfield moved to this city and occupied portion of old plant of Ames Manufacturing Co.; in September, started up; in October, weavers struck for increase; added 12 new looms and dyehouse. — Springfield Brick Co. purchased plant of Coomes Brick Co. *September.* W. J. and C. D. Dunn, began manufacture of envelopes. — Cashin Card & Glazed Paper Co. installed electric light plant and ran nights. — J. Stevens Arms & Tool Co. ran nights; in October, completed addition to factory and installed new machinery; in November, began operations and foundation for another addition. *October.* D. S. Courtney, bobbins, completed addition to plant. — A. A. Coburn of Holyoke began erection of new factory in this city. *December.* The Consumers Brewery plant of the Springfield Breweries Co. transformed into a bottling department.

Clarksburg. In April, Strong, Hewat, & Co., cassimeres, added new machinery and ran nights; in July, added new machinery and continued night work during a good part of the year. *December.* Briggsville Brush Co. began manufacture of brushes.

Clinton. In January, Bigelow Carpet Co. shut down 2 weeks for stock taking; in February, shut down temporarily, as did other mills, owing to the storm and scarcity of coal; also started woollen mill in all its departments after having been shut down since Dec. 17, 1898; in May, shut down No. 3 weave room; in June, completed foundation for new storehouse; in August, added new spinning frames; in October, replaced old machinery with 22 new spinning frames; in November, reduced wages of some of the weavers on finer grades. — Sterling Worsted Co. ran portion of plant 12 hours 5 nights a week in addition to regular running time; in April, was incorporated with authorized capital of \$50,000. — Clinton Worsted Co. remodeled the old Counterpane Mill; in September, put in machinery for spinning its own yarn, and ran weave room nights. *April.* Lancaster Mills increased wages; operatives struck claiming increase was a misnomer; after one day returned to work satisfied; in September, made additions; in December, increased wages. *June.* Italian laborers at Metropolitan Water Works struck owing to alleged failure of contractor to pay wages due. *October.* Hayes Loom Harness Co. formed by John Hayes to manufacture.

Colrain. In December, Griswoldville Manufacturing Co. completed repairs on reservoir, and increased wages.

Concord. In August, Concord Rubber Co. completed organization and began remodeling factory; in September, began operations. *October.* American Woollen Co. purchased 50 acres of land for site for new buildings.

Conway. In March, Conway Woollen Mills, under management of John Fothergill & Co., completed repairs and began work on samples; in April, shut down indefinitely; in July, Beebe, Webber, & Co., of Holyoke purchased stock and moved it to that city. *May.* Tucker & Cook Manufacturing Co. added new water wheels to its upper works. *December.* E. A. Goodnow began erection of new cheese factory.

Cummington. In May, H. N. Elder leased mill of Walter M. Shaw for manufacture of penholders. *August.* L. L. Brown Paper Co. shut down for repairs.

Dalton. In January, Geo. F. Booth completed soapstone mill; in March, began operations. — Dalton Shoe Co. increased force; in July, ran nights. *February.* Renfrew Manufacturing Co. ran full time; in March, shut down on account of dull trade; in May, started up in part; in July, started up in full. — Grist mill of T. W. Ramsbotham damaged by fire; rebuilt. *June.* Andrews & Reddick of New York leased the Glennon Mills to manufacture fine woollens and worsteds; in September, added new machinery and began

operations; in October, ran portion of mill nights and completed and equipped new dressing room. *July.* Old Berkshire Mills, paper, shut down for repairs on dam. *August.* Bay State Mill shut down for repairs. — Byron Weston Co., paper, shut down temporarily. *September.* Centennial Mill shut down for 15 days and added new machinery.

Dana. In April, H. W. Goodman Co. fitted up shop for manufacture of felt hats in addition to regular product. — Bishop & Cooley began operations in new mill.

Danvers. In February, Downing, Perkins, & Co., moved from Peabody into the Tapley factory. — Danversport Rubber Co. leased Bates factory for separating wool from waste felt and similar material. — Stitchers at shoe factory of Geo. A. Creighton & Son struck for advance; in April, several employes returned to work; in May, differences adjusted; in July, firm moved back to Lynn on account of its labor troubles. *March.* L. E. Learoyd morocco-factory property sold at auction. — Eaton & Armitage, shoes, shut down for vacation. — E. P. Fowle & Co., shoes, moved to Beverly. — Martin Kelly & Co. shut down and firm went out of business. — New firm absorbed business of Massachusetts Glove Manufacturing Co., retaining old name; in May, 8 table cutters struck for increase; not granted; in July, plant slightly damaged by fire; in December, ran nights. *May.* W. H. Cooke, neckwear, sold to Boston parties who removed stock to that city. *July.* Glaziers employed by Bernard, Friedman, & Co. struck for increase; granted. Later, company absorbed by the American Hide & Leather Co. *August.* Massachusetts Morocco Co. leased plant to manufacture calf and goat skin leather exclusively. — Downing, Perkins, & Co. installed new boiler. *October.* Consolidated Electric Lamp Co. formed to manufacture; vacant factory of C. A. Keith leased and remodeling begun. *December.* Herbert M. Bradstreet & Co., neckwear, installed electric motor. — Danvers Iron Works ran nights.

Dedham. In March, Merchants Woollen Co. resumed operations after a six months' shutdown. *July.* Timothy Smith, retired cotton goods manufacturer died, aged 78 years.

Deerfield. In March, Arms Manufacturing Co., wallets, resumed operations after a short vacation.

Dighton. In January, Dighton Stove Lining Co. shut down indefinitely; in May, works destroyed by fire; in August, began rebuilding, completed in December. *February.* North Dighton Co-operative Stove Co. shut down on account of lack of coal, resuming later. *March.* Century Stove Co. resumed operations after brief shutdown; later, shut down indefinitely, resuming in June with full force, and shutting down again in August; in December, shut down indefinitely. — James M. Lincoln of L. Lincoln & Co., paper, died, aged 65 years; in April, paper mill shut down for repairs and later in month ran nights, continuing, in May and September, night work. *April.* Dighton Waste Co. ran nights. *September.* Mt. Hope thread mill shut down by the American Thread Co. and machinery removed.

Douglas. In February, Douglas Axe Works ran to full capacity; during 1898, considerable new machinery had been added to plant; in May, grinders struck for increase; in November, shut down temporarily on account of low water. *May.* W. E. Hayward & Co., woollens, ran on full time.

Dracut. In March, after running three days a week for several months, M. Collins Woollen Manufacturing Co. resumed on full time; in May, plant absorbed by American Woollen Co.; in July, machinery from Washington Mills, Lawrence, set up in these mills to manufacture beavers and serges exclusively; in September, old wooden dyehouse torn down; later replaced by brick weave shop; shut down 8 days for repairs; stitchers struck on account of wages; in October, returned to work; in November, new weave shop completed, equipped, and operations begun; weavers threatened to strike unless wages were increased; no reply made by company but wages of card and picking room employes were advanced, and later in month 15 spoolers struck for an advance; places filled; 12 new wooden tenements completed. *November.* M. L. Bassett & Co., paper, added new machinery.

Dudley. In January, Stevens Linen Works shut down for repairs and stock taking; in April, wages increased to rate paid in 1894; in July, shut down partially for five days;

In November, completed addition and installed new machinery. *May.* Chase Woollen Co. absorbed by American Woollen Co.; in September, new addition completed and new looms set up. — Perry's Woollen Mill ran nights; in June, weaving department ran on 5-day time; in November, shut down on account of low water. *August.* J. B. Prescott & Son added box-making machinery to product.

East Bridgewater. In November, Hathaway box mill started operations under new firm.

Easthampton. In February, Williston Mills property, consisting of two large mills, office building, boarding house, 46 tenements, land, and some personal property, sold at auction to J. H. Lane & Co. of New York; in June, mills and property transferred to West Boylston Manufacturing Co. and repairs begun; in July, named plant "Hampshire Mills" and equipped No. 2 mill with spindles; in November, added new machinery; in December, increased wages. *November.* Additional floor constructed on No. 3 mill of Glendale Elastic Fabrics Co. for a spooling room. — During the year, machinery of Sawyer & Wolf, ribbons, etc., sold to Jedburn & Moore of Chelsea.

East Longmeadow. During the year, Michael A. Glynn, retired freestone manufacturer, died, aged 47 years. — Norcross Bros. erected mill for sawing and cutting stone.

Easton. In March, Hatch & Grinnell enlarged capacity of plant, and in November ran nights; in December, increased wages. *May.* Drake's iron foundry reopened after having been closed for several years. *September.* Oakes A. Ames, president Oliver Ames & Sons Corporation, died, aged 70 years.

Egremont. In April, Dalzell Axle Co. ran on full time for the first time in five years.

Enfield. In January, Enfield Manufacturing Co., satinets, ran 3 days each week; in March, ran overtime; in October, added new looms. — Swift River Co. discontinued overtime work; in August, shut down one week for repairs. *March.* Woods & Ward's box factory ran overtime; in August, new grinder and turbine wheel set up.

Erving. In January, Miller's Falls Co. shut down one week for stock taking and in July for brief vacation. *March.* P. D. Pike's factory sold at auction. — A. C. Drury of Worcester leased Stoneville factory for manufacture of leatherette; in June, purchased the property.

Essex. During December, A. D. Story completed 8 new vessels and James & Tarr, three.

EVERETT. In January, B J Richardson, varnish, died; business purchased by Boston Varnish Co. and operations carried on after June 1. *July.* Forty coke shovelers at New England Gas & Coke Co. struck for increase. — Harrison D. Gloyd, jellies, sold to McCurdy & Shearman. — Fire damaged plants of Ainslee & Reed and Columbia Manufacturing Co. *September.* H. K. Porter granted a permit to build two-story building for manufacturing purposes. *October.* Boston Varnish Co.'s factory destroyed by fire.

Fairhaven. In March, Atlas Tack Co. ran 4 nights each week; 52 machines taken from plant at Plymouth set up. *May.* Molders employed at Fairhaven Iron Foundry locked out.

FALL RIVER. In January, James Marshall & Bros. joined a combination formed to regulate the manufacture of derby hats; in April, No. 2 factory damaged by fire; in September, ran nights. — Arkwright Mills reduced capital stock from \$500,000 to \$450,000; in March, shut down for 3 hours and 20 minutes; in August, added new looms; in June, shut down one hour; in September, picker room damaged by fire; in December, ran nights. — Robeson Mills decreased capital stock from \$260,000 to \$13,000, then increased capital to \$78,000 and the number of shares to 780; shut down to install four boilers; in February, resumed operations; in April, fined \$50 for running overtime; in May, shut down 35 minutes; in July, shut down 30 minutes; in September, shut down one hour and 35 minutes; in December, ran nights. — American Printing Co. ran overtime; in May, shut down printing department on account of accident; in June, shut down one day; in September, shut down on account of accident to machinery; in October, added new

machinery. — Machinery of Strange Forged Drill Works sold by assignees. — Fall River Ice Co. began cutting season's ice. — Richard Borden Manufacturing Co. added new looms; in September, made other additions; in October, added new machinery. — Pocasset Hat Co. reduced capital stock from \$60,000 to \$42,000, amount actually paid in; in March, shut down one hour; in October, shut down pending settlement of business troubles. — Parker Mills moved the devices in its cloth room into the cloth room of Hargraves No. 2 mill and the product of both mills finished there; space thus secured at the Parker Mills used for an additional weave room, 63 looms being set up; in February, fire damaged mule and card room; in March, mule room again damaged by fire; in April, purchased land at Warren, R. I., for erection of new mill and voted to increase capital stock \$300,000; ran overtime; in May, shut down 3 hours for repairs; in December, ran nights. — Hargraves Mills placed looms in spare weave room of Arkwright Mills; in February, No. 1 mule room damaged by fire; in March, mule room again damaged by fire; added new looms to No. 3 mill; No. 2 mill shut down 1½ hours; in April, Nos. 1 and 2 mills ran overtime; No. 3 mill addition completed, fitted up, and put in operation; in July, added new machinery; in August, No. 1 mill ran nights; No. 4 mill completed and machinery installed; No. 1 mill changed over from coarse to fine yarn; in September and December, Nos. 2 and 3 mills ran nights. — Jesse Eddy Manufacturing Co. shut down for 2 weeks; in March, card room employes struck for 10 per cent increase; places filled; later, absorbed by the American Woollen Co.; in December, shut down permanently. — Tecumseh Mills ran part of carding department overtime; in February, picker room damaged twice by fire; shut down No. 1 mill 30 minutes; in March, added new machinery; in September, No. 1 mill shut down one hour; in October, shut down 30 minutes; in November, fire damaged slasher in No. 2 mill. — Slade Mills reduced capital stock from \$247,500 to \$200,000; in March, card room damaged by fire; in September, shut down one hour; reorganization perfected. — Laurel Lake Mills reorganized and increased capital stock \$100,000; in March, reduced stock to \$300,000.

February. At a conference between Manufacturers Association and Textile Workers Association it was agreed to restore the schedule of wages in force prior to Jan. 1, 1898, restoration to take effect April 3. — John E. Leonard's cigar factory damaged by fire; — Picker at J. H. Estes & Son's mill damaged by fire. — Shove Mills voted \$125 each to Fall River and Emergency hospitals. — Sanford Spinning Co. added 6 pairs of mules; in June, added new mules; later, added one story for cone winding; later, absorbed by the New England Cotton Yarn Co.; in December, packers struck; places filled. — Cornell Mills shut down temporarily on account of accident to engine; in July, shut down 30 minutes; in December, ran nights. — Kerr Thread Co. added 3 pairs of mules; in March, completed foundation of new weave shed; in June, added new mules; in August, added new looms. — Globe Yarn Mills discarded 3 pairs of mules; in June, No. 3 mill damaged by fire; in September, No. 3 card room ran nights; later, absorbed by the New England Cotton Yarn Co.; in December, shut down 2 hours on account of low water and card room operatives struck for increase. — Durfee Mills shut down No. 2 mill 48 minutes on account of trouble with shafting; in September, replaced 2 pairs of mules with spinning frames; in October, No. 4 mill shut down 20 minutes owing to accident. *March.* William Hyland & Son, mattresses, of Worcester, opened a branch factory in this city. — Granite Mills added new picking machinery; in December, ran nights. — Algonquin Printing Co. added new printing machine. — Weetamoe Mills added new storehouse, 162 x 75 feet. — American Linen Co. changed the spindles in its spinning frames; in September, shut down one and a half hours; in November, announced that \$40,000 had been expended during year for repairs and improvements. — Merchants Manufacturing Co. installed new spinning frames; in September, No. 1 spinning room damaged by fire; in November, damaged by fire; in December, ran nights and replaced 3 mules by ring frames. — Barnard Manufacturing Co. shut down 48 minutes owing to accident; in September, shut down several times on account of low water; in November, announced that \$4,000 had been expended for machinery during year; in December, shut down for repairs. — Border City Manufacturing Co. shut down No. 2 mill owing to accident; in April, No. 1 mill shut down 55 minutes; in October, added new machinery. — Fall River Manufactory shut down owing to explosion; repairs made and new boilers ordered to replace those damaged; in June, shut down 5½ hours on account of accident to machinery; in October, shut down 1½ hours. — Davol Mills storehouse damaged by fire; in July, weavers struck over disagreement relative to work; compromised; in December, ran nights. — Wampanoag Mills added new picking machinery; in April, weave rooms shut down owing to scarcity of warps; in July, weavers in No. 3 mill struck on account of dissatisfaction with pay; settled as demanded by weavers; in September, shut down one day on account of low water and later on account of lack of filling and warps; in October, shut down one hour; weavers at No. 2 mill struck; settled.

April. King Philip Brewery completed all but interior finish. — Metacomet Mills shut down 30 minutes; in September, replaced mules with ring frames; in November, announced that \$36,000 had been expended for repairs and improvements during year; in December, ran nights. — Fall River Bleachery ran overtime; in November, plant sold for \$600,000; each stockholder was offered \$150 per share for his old stock and given an option as to whether he preferred cash or securities of the new company which were 5 per cent gold bonds in multiples of \$500 having 20 years to run, but redeemable in 5 years at \$105 with accrued interest, said bonds being secured by mortgage on entire plant and protected by an annual sinking fund. The dividends of the Fall River Bleachery for the past 10 years had been \$186,000, an average of 4.65 per cent, and for the past three years they had been at the rate of 8 per cent; later, the Fall River Bleachery of Massachusetts was incorporated under New Jersey laws with an authorized capital of \$600,000 of which \$200,000 was preferred stock, bearing 6 per cent dividend; in December, transfer completed. — W. C. Powers, roll coverer, sold out to O. B. Wetherell. *May.* Union Cotton Manufacturing Co. shut down 35 minutes owing to defective feed pipe; in June, stopped 30 minutes; in September, stopped 45 minutes; in November, completed storehouse. — Stevens Manufacturing Co. began additions to cloth room, weave room, and spinning mill; in July, added new machinery; in September, added new spinning frames, and shut down one hour, and the same in October; during year expended \$150,000 for repairs and improvements. *June.* Many of the mills were affected by a small-pox scare, operatives being out on account of vaccination. — Iron Works Mills shut down one day; in July, No. 2 mill stopped 65 minutes owing to accident to machinery; added new looms; in September, No. 4 mill shut down on account of accident, and new looms added; in December, increased wages 10 per cent. — Narragansett Mills shut down 40 minutes on account of accident to engine. — Chase Mills shut down No. 2 mill on account of accident to engine; in September, increased capital stock from \$500,000 to \$750,000. *July.* Mill firemen demanded an increase which was refused by manufacturers and a strike resulted. Non-union and unlicensed firemen were employed and no shutdown occurred. The Attorney General ruled that under the law firemen did not need licenses to make steam; if an engineer was in charge, that was sufficient. This position was denied by the firemen and a test case brought against one of the unlicensed men. The lower court decided that mill firemen, whether under the direction of an engineer or not, must be licensed. An appeal was taken. Meanwhile (in September) the striking firemen declared the strike unsuccessful and sought their old or new places. — Troy Mills picker room damaged by fire; in September, shut down 50 minutes on account of accident; in October, shut down one hour on account of accident. — Luther Reed Manufacturing Co. incorporated to manufacture harness reeds, combs, etc.; authorized capital, \$6,000. — Sausage factory of Henry R. Adams destroyed by fire. — Hugh Morin, baker, retired from business; no successor. — Fall River Bobbin & Shuttle Co. absorbed by United States Bobbin & Shuttle Co.

August. Osborn Mill ran No. 2 spinning room nights; in December, ran nights. — Flint Mill weavers struck for increase; granted; in September, shut down 35 minutes and weavers again struck; in October, shut down 55 minutes. *September.* Carr Metal Co. sold business to New Jersey parties; machinery removed. — Conanicut Mills shut down 45 minutes on account of accident. — Pocasset Manufacturing Co. shut down 4 hours. *November.* Union Belt Co. received an offer for its entire plant at \$125 per share, or \$60,000, from Fairweather & Ludoux of New York. Company capitalized for \$48,000, and during past two years paid 6 per cent annual dividends. — Kilburn, Lincoln, & Co. put on the market a loom improvement the object of which was to provide a shuttle-box operating mechanism in which accurate and positive movement was imparted to the box or frame adapted to contain several shuttles which carried filling of various colors or counts. — Suit was brought against Tecumseh Mills for infringement of a patent for electrically stopping the engine in case of accident. — Trustees of the Textile School decided on the site for the new school. — Fire damaged carding department of Sagamore Mill No. 2. — Stafford Mills installed automatic sprinklers in its cotton sheds. — Seacomet Mills posted notice to the effect that weavers must not clean looms while in motion; several operatives struck returning later; in December, ran overtime. — C. F. Priest began manufacture of satteens, towelings, etc. *December.* During the month all the cotton mills increased wages. — Altham Motor Co. shut down indefinitely.

Print cloth statement. From the annual report made by Mr. Clinton V. S. Remington, we extract the following: The print-cloth market for the year shows the business to have been fairly prosperous with a production of some 12,000,000 pieces. Business was excellent at the opening of the year and continued so during the month of February. In the months of March and April, rates were lighter and there was some accumulation of stock,

both in this market and throughout New England. May showed very sharp trading and during the week May 5-12 there were sales of from 1,300,000 to 1,400,000 pieces. The market continued strong until the middle of June, after which it ran light until the close of July. August opened with good demand, holding through that month and September. The first week of October opened strong and the sales for the week ending Oct. 6 were 1,500,000 pieces, and for the week following 600,000 pieces, the sales for the month aggregating some 2,750,000 pieces. The week ending Nov. 24, again showed large sales, some 850,000 pieces being taken by the buyers. December ruled good and the year closed with the mills practically bare of stock and contracts placed for a large proportion of their product for several months to come; some of the contracts extend through the whole of the year 1900.

In the following table we reproduce the statements of production from 1890; the figures for 1898 and 1899 are estimates furnished by a member of the Manufacturers' Board of Trade:

YEARS.	NUMBER OF PIECES OF PRINT CLOTH				
	Produced	Sold	On Hand at close of Year	Stock in United States at close of Year	Sold for Future Delivery
1890,	9,937,000	8,584,000	583,000	952,000	1,540,000
1891,	9,985,000	8,838,000	90,000	278,000	1,375,000
1892,	10,045,000	10,759,000	7,000	9,000	2,850,000
1893,	9,065,000	7,119,000	142,000	340,000	950,000
1894,	8,478,000	8,331,000	140,000	211,000	1,300,000
1895,	11,090,000	9,871,000	287,000	464,000	1,125,000
1896,	10,055,000	7,819,000	1,802,000	2,300,000	1,001,000
1897,	10,648,000	10,470,000	1,836,000	2,390,000	1,144,000
1898,	11,500,000	13,332,500	4,500	500,000	1,800,000
1899,	12,000,000	13,500,000	-	500,000	2,000,000

The following table shows the variation in price of print cloth, 64 x 64, since 1890:

YEARS.	PRICES PER YARD OF PRINT CLOTH (64x64)		
	Highest	Lowest	Average
1890,	3.563	3.000	3.344
1891,	3.063	2.750	2.951
1892,	4.063	3.063	3.418
1893,	4.000	2.750	3.295
1894,	3.000	2.599	2.763
1895,	3.313	2.438	2.875
1896,	3.000	2.438	2.600
1897,	2.688	2.250	2.484
1898,	2.375	1.875	2.063
1899,	5.125	3.250	2.685

FITCHBURG. In January, John Becker Manufacturing Co. consolidated with Brainard Milling Machine Co. of Hyde Park and Dedham and moved to former town. — Putnam Machine Co. damaged by fire. — John M. Barr started a yarn dyeing and bleaching plant. — E. E. Nutting & Co., confectionery, retired from business; no successor. — Crocker, Burbank, & Co.'s paper mill machine room damaged by fire; in September, added new paper machine. — Parkhill Manufacturing Co. made small increase in rate of wages paid to weavers on certain lines of goods; in March, put in operation new wage scale readjusting wages throughout the mills; weavers struck; in April, Mill C shut down on account of strike; later, weavers accepted new wage schedule and returned to work; in July, shut

down 3 days for vacation. *March.* Wm. A. Hardy began addition to brass foundry, 60 x 80 feet. — Beoli Co. started about 50 looms; in April, absorbed by the American Woollen Co.; in July, shut down portion of plant to install new engine. *April.* Granite cutters employed by F. A. McCauliff struck for increase. — Fitchburg Worsted Co. absorbed by the American Woollen Co.; in June, ran weaving department nights. — Arthur A. Train, screen plates, out of business; no successor. *May.* Bottling works of C. S. Keith sold to D. E. Sutton & Co. — Hollow Mill ran nights. *July.* Orswell Mill completed new power house. *August.* New roof put on portion of Fitchburg Paper Co.'s No. 2 mill. *September.* Lasters at Edgar F. Belding & Co.'s shoe factory struck; discharged and places filled. *October.* Fitchburg Shirt Co. added white shirts to product. — Steam Motor Engine Co. organized; authorized capital, \$500,000. — Glen Mills shut down owing to accident; in November, added 12 new looms. *November.* Fitchburg Shoe Tip Co. went out of business; no successor. *December.* Simonds Manufacturing Co. began erection of new building, 40 x 120 feet, two stories. — Addition to Nocke Mill completed.

Framingham. In November, erection of addition to Saxonville Mills begun; to be 135 x 80 feet, 2 stories; first, for dyeing wool, slubbing, and yarn; second, blanket department.

Franklin. In January, Waite Felting Co. shut down indefinitely; later, sold to Joseph G. Ray and then to American Felt Co.; in November, ran to full capacity which had been increased. — Ray's Woollen Co. absorbed by American Woollen Co.; in July, picker room damaged by fire; in October, new office building completed. *February.* Franklin Knitting Co.'s picker house destroyed by fire; rebuilt. *August.* Murdock & Geb began manufacture of improved bobbin holder. — Worcester Textile Co. purchased plant of Franklin Cotton Mills and remodeled for occupancy; in November, built an addition and added 50 new looms. *October.* O. F. Metcalf & Son completed new box and planing mill and added new machinery.

Gardner. In April, plant of Central Oil-Gas Stove Co. destroyed by fire; outside quarters leased and rebuilding begun. *May.* H. S. & S. W. Richardson began erection of new factory building. *August.* A. O. Speare & Co. purchased idle plant of E. Wright & Co. and started up. *November.* Wyman & Upham's factory damaged by fire.

Georgetown. In July, A. B. Noyes & Co.'s shoe factory shut down for 3 days vacation; in December, shut down for stock taking. — Pentucket Shoe Co. cut down wages in stitching room; operatives struck and factory shut down; in September, two attempts made to set fire to factory, both failed; in October, shut down indefinitely. *October.* H. H. Noyes purchased business of Geo. W. Chaplin & Co. and started manufacture of shoes.

Gill. In April, New England Fibre Co. and Riverside Lumber Co. shut down indefinitely. *July.* Turner's Falls Lumber Co. leased idle plant of New England Fibre Co.

GLOUCESTER. In January, fire damaged soap factory of Chas. S. Marchant. *March.* Employes of Rockport Granite Co. struck on account of posted notice to the effect that men should either work 10 hours per day or quit. *April.* Gloucester Electric Co. built new generator room 20 x 60 feet, and in May, added new machinery. *September.* Cape Ann Anchor Works partially destroyed by fire. *October.* Sailmakers struck for increase; granted in 3 cases; in November, balance of employers granted demand. *December.* Tarr Isinglass Co. began season's work. — A. W. Dodd added new boiler.

Goshen. In April, saw mill of Howard Packard destroyed by fire.

Grafton. In January, Washington Mills leased by American Manufacturing Co. to manufacture shoddy. *February.* S. A. Forbush ran lasting department nights. — J. S. Nelson & Son Co., shoes, ran nights; in May, shut down each department in turn for stock taking; in June, started on new run; in November, ran cutting department on 10-hour time. — Saunders Cotton Mill began erection of addition, 70 x 60 feet; in April, completed, and new looms added; in December, increased wages. *March.* Harvey & Kempton of Farnumsville Cotton Mills, increased wages; ran on full time; in December, again increased wages. — Fisher Manufacturing Co. added new cards and combers; in April, increased wages; in May, added new looms and cards; in July, added 10 new cards and enlarged reservoir; in December, increased wages; weavers struck for further

increase. *May.* Finlayson, Bousfield, & Co. ran nights; in June, made repairs and added improvements; in July, absorbed by American Thread Co.

Great Barrington. In January, Endrick Woollen Co. shut down temporarily owing to lack of orders; in May, picker room damaged by fire. — Stanley Instrument Co. ran nights; in September, increased capital stock from \$75,000 to \$150,000; in October, began erection of new factory, 2 stories, 52 x 75 feet; in November, ran nights. *February.* C. R. Brewer Lumber Co. began running on full time. *May.* Leland Filter Co. organized; authorized capital, \$6,000. — Thomas & Palmer, woodworkers, added new machinery. *August.* B. D. Rising of Springfield purchased new Cone Mills; old mill of Owen Paper Co. purchased by H. A. Moses of Mittineague Paper Co.; properties combined under one management and new company formed as B. D. Rising Paper Co. to manufacture fine writing paper; in October, work of fitting up mills begun. *October.* Monument Mills added new looms. — James F. Scott opened new marble quarry. *December.* Egremont and Goodale Marble Co. stopped quarrying for the season. — Chas. H. Nodine sold his interest in the Foote-Nodine Printing Co.

Greenfield. In January, Cutler, Lyons, & Field, shoes, ran on short time. *February.* E. F. Reece Co. ran day and night; two sets of hands employed. — Emil Weissbrod & Sons, wallets, etc., received order for 75,000 tobacco pouches. *April.* Greenfield Machine Co. formed to manufacture patent grinder. *August.* Rugg Manufacturing Co. shut down for repairs; in September, completed new boiler and engine house, installed new engine and boiler, and resumed operations. — T. Morey & Son, printers, began erection of new building; new electrotyping plant added. — Merriam & Tilden sold to B. B. Noyes & Co. *November.* W. N. Potter & Sons made improvements on mill. *December.* New factory of Fred. E. Wells completed and machinery set up. — Nichols Bros. added new boiler. — During the year Wells Bros., A. F. Towle Sons & Co., and Geo. Pond made additions to factories.

Groton. In November, Groton Leather-Board Co. organized.

Groveland. In May, movement started for erection of beet sugar plant and a company called New England Beet Sugar Co. tentatively formed for its manufacture, provided farmers in the neighborhood would set apart not less than 2 acres for cultivation of the beets, the company furnishing seeds and agreeing to pay from \$2 to \$4 per ton for all beets raised.

Hadley. In February, employés at Thos. E. Burke's sorting shop struck for increase; granted. *April.* Wm. Phillips sold to H. P. Baker.

Halifax. In June, steam box mill of E. A. Angus destroyed by fire.

Hampden. In February, Hampden Mills Co. shut down indefinitely; in March, resumed operations; in April, looms replaced by others designed for weaving worsted fabrics; in May, shut down temporarily.

Hanover. In September, John Peirson of Rockland leased plant here for manufacture of shoes.

Hardwick. In April, Geo. H. Gilbert Manufacturing Co., woollens, put in spur track to No. 4 mill connecting boiler house with B. & M. R. R.; in August, ran nights; in December, increased wages.

Harvard. In July, employés of Frank G. Bailey, bricks, struck for increase.

Hatfield. In March, C. S. Shattuck's gun factory and Hugh McLeod's machine shop ran full time and employed additional hands.

HAVERHILL. In January, Thayer, Maguire, & Field, and F. E. Hutchinson, shoes, posted new price list for turn-workmen; a similar list was posted in other factories, and during the year wages were readjusted for this branch of work in all the factories of the city; there was no radical change in prices, rather an equalization. — Morse & Proctor, welts, increased capacity. — W. B. Thom & Co., hats, resumed work after 6 days' shutdown for stock taking. — W. H. Gould, shoes, and C. W. Chandler & Co., bottom stock, damaged

by water. — Some of the factories crippled owing to prevalence of La Grippe. — A. Roberts & Co. ran 8 of their 15 looms on cotton worsteds. — Frank I. Dow began manufacture of slippers. — F. N. Livingston & Co., heels, introduced improved heel, invention of Chas. A. Bliss, on which the rand was pasted instead of being nailed. — Wm. W. Appleton admitted as general partner by Geo. A. Burnham Counter Co. — Snay & Littlefield, heels, moved into larger quarters; in July, dissolved, A. L. Littlefield continued. — Stock fitters at T. S. Riddock & Sons struck; places filled; in June, shut down for stock taking; in October, increased force. — Webster & Tabor filled order for women's shoes for a dealer in Honolulu. — J. H. Winchell, shoes, increased force; in February, 26 female operatives struck because they were asked to tie a knot in laces; places filled; in October, leased additional room. — P. N. Wadleigh, shoes, added new boiler; in February, refused to accept new turned-work price list; in consequence 18 teams struck; later, list posted; in March, 36 operatives struck for an advance of $\frac{1}{4}$ a cent per pair; in June, moved into larger quarters.

February. One shoe manufacturer was fined \$50 and the cases of 2 others placed on file for violating the law relative to females working overtime. — F. W. Millay, formerly connected with Millay Last Co., began manufacturing on his own account. — New brewery owned by Karl E. Schlossstein began operations. — Fire damaged box factory of Chas. W. Smith and woodworking mill of E. A. Messenger. — J. W. Russ Co. shut down temporarily owing to lack of power; in March, 4 heel scourers struck for increase; refused; in November, added two new heel machines. — Chesley & Rugg contracted with Allen G. Twombly for making of turned shoes in their Haverhill factory; later, a new price list was given Mr. Twombly and refused by him, in consequence turned workmen struck and were discharged; later, list accepted and work resumed; in March, another strike occurred and settled by discharge of 4 teams of non-union men; in April, shut down temporarily on account of accident to machinery; in June, shut down one day; in October, increased force.

March. New machine set up in stitching room of Oliver S. Hubbard having the special advantage of automatic spacing for eyelets, making it possible to space and omit the eyelet, leaving shoes ready for insertion of lacing hooks, at the rate of 300 eyelets per minute; in December, increased wages. — W. W. Spaulding & Co., Cerat & Bonin, and James Martin accepted turned-work price list, and S. B. McNamara refused it; strike resulted and factory shut down and stock taken, after which list was accepted and work resumed. *April.* Jennings & Hayes, E. G. Morrison & Co., H. B. Goodrich & Co., H. H. Hoyt Shoe Co., Morse Bros., Poor & Pole, and W. P. Bradford accepted new turned-work price list, and Chas. H. Hayes and Morse & White, boxes, accepted new price list of Box-makers Union. — S. W. Lakin Co. began erection of new shoe factory. — Morse & White, boxes, ran nights. — Gale Shoe Manufacturing Co. shut down for stock taking; in December, increased wages. — R. W. Cooper, patterns, sold to Soule & King. — A. A. Ordway, shoes, increased capacity and employés. *May.* John Owen & Co. and E. L. Wood & Co., boxes, accepted boxmakers price list, and E. Bottonley & Co., shoes, list of turned workers; O. S. Carrier refused to accept list for turned work, and operatives struck. — S. F. Chase, shoes, moved to larger quarters. — H. & W. Kimball, heels, retired from business. — W. P. Tucker, slippers, retired from business; no successor. — L. C. Ring, building materials, shut down for repairs. — John Owen & Co., boxes, shut down owing to breaking of main belt. — Miller Bros., shoe stitchers, moved to larger quarters. — C. W. Arnold & Co., cut stock, increased capacity. — Chas. O. McLane, retired shoe manufacturer, died, aged 58 years. — Stevens Woollen Mills added new machinery; in June, resumed operations. — Pentucket Wood Heel Co. and Poor & Bailey consolidated; business continued under former name.

July. Twombly & Rouleau, shoes, retired from business; no successor. — H. B. Goodrich & Co., shoes, and Frank E. Watson, soles, moved to larger quarters. — Carlton & Dow, cut soles, retired from business; in November, Geo. E. Pearl purchased machinery and fixtures to continue; in December, M. H. Dow of firm entered H. I. Pinkham & Co. *August.* Thos. M. Arnold, cut soles, increased capacity. — New union price list posted in H. P. Williams' shoe factory. — Hoyt, Dow, & Kennedy began erection of addition to leather factory, 45 x 220 feet, 2 stories. *September.* W. W. Spaulding & Co., increased wages. — C. W. Tappan Shoe Co. incorporated to manufacture women's shoes; authorized capital \$25,000. — Lang & Roberts began manufacture of shoes. — John P. Gilman's Sons, hats, shut down owing to accident; in October, began erection of addition, 2 stories, 60 x 90 feet. — Plumbers in city struck for increase; 2 firms granted demand. *October.* Columbia Pattern Co. began manufacture. — C. K. Fox increased force. — Chick Bros. dissolved; W. M. Chick continued under same style; wages in stitching department adjusted. — Searl & Webster moved to larger quarters. — Geo. W. Walker, cabinet maker,

died, aged 46 years. — *November*. J. W. Proctor, soles, retired from business; no successor. — Perley Weeks began shoe manufacturing in his old factory; in December, increased wages. — Lasters employed by Henry S. Sprague struck to enforce new price list; firm refused to accede to demands; places filled. — Alonzo A. Hobbs, retired carriage manufacturer, and Orange B. Otis, retired shoe manufacturer, died. *December*. Webster & Tabor increased wages of lasters; earlier in year, purchased bottoming business of James B. Martin. — Isalah W. Titcomb, sole leather manufacturer, died, aged 57 years.

Shoe shipments. The number of cases of shoes shipped during 1899, as compiled by the *Haverhill Gazette*, is given in the following table in comparison with the shipments of the five preceding years:

MONTHS.	1894	1895	1896	1897	1898	1899
January,	26,295	29,857	38,709	41,190	38,931	40,514
February,	27,867	29,519	34,411	43,176	40,509	41,356
March,	41,090	47,275	36,668	44,365	54,816	54,989
April,	31,946	42,056	47,572	51,358	39,020	44,481
May,	31,514	51,276	33,361	34,939	20,200	42,894
June,	35,293	31,599	30,706	28,679	33,350	42,284
July,	20,993	20,704	29,694	29,923	24,125	27,466
August,	27,939	23,500	22,688	22,621	24,090	36,715
September,	22,906	20,856	21,617	32,638	30,966	30,604
October,	23,937	20,847	26,327	25,156	24,873	21,062
November,	27,863	25,546	21,227	25,083	25,935	39,283
December,	30,160	23,875	43,143	42,734	39,466	39,078
TOTALS,	347,803	366,910	386,123	421,862	396,281	460,726

The increase in 1899 over 1898 was 64,445 cases, or 16.26 per cent. On the basis of 40 pairs to a case there were shipped in 1899, 18,429,040 pairs as against 15,851,240 pairs in 1898, and 16,874,480 pairs in 1897.

Heath. In April, the local creamery plant, including buildings and machinery sold at auction to A. J. Barrington. *November*. New company formed to mine copper ore which it was claimed had been discovered on one of the mountains.

Hingham. In November, Samuel W. Marsh, the oldest living shoe manufacturer, died, aged 96 years.

Hinsdale. In February, Hinsdale Woollen Co. ran on short time until latter part of month, when work was resumed on full time; in March, sorters returned to work after several weeks' enforced idleness; in August, dresser tenders struck owing to a disagreement over wages; adjusted; the upper mill started up after a shutdown of over a year; in September, added new steam fire pump, and ran carding and spinning rooms overtime; in November, increased wages. *December*. Alpha Mining Co. purchased tract of land.

Holbrook. In April, John P. Blanchard, retired shoe manufacturer, died, aged 71 years. *September*. Holbrook Shoe Co. incorporated; authorized capital \$20,000.

Holden. In January, mills of C. G. Wood Co. shut down indefinitely with exception of finishing department; later, resumed; in September, installed 4 fulling machines. *June*. Glen Woollen Mills Co. shut down; in September, started up under new firm as Glen Mills. *September*. Jefferson Manufacturing Co. began erection of new dyehouse, completed in December; in October, ran nights.

Holliston. In February, John Clancy completed removal of machinery to Brookfield. — New stock company formed to manufacture vinegar in the Morse cider mill which had been idle for several years. *March*. Z. Talbot took possession of saddlery factory of Hughes & Co.; business continued temporarily. — Arthur L. Pond retired from firm of Wilbur & Co.; I. E. Sweet succeeded. — Property of Equity Boot & Shoe Co. sold at

auction. *August.* Peter Dillon leased factory to manufacture cigar wrappers from tobacco refuse by new process. *October.* Straw factory of late D. C. Mowry sold to new firm for manufacture of rubber goods. *December.* Holliston yarn mills leased by Thos. Alshaw of Lowell to manufacture under name of Holliston Cotton Mills Co.

HOLYOKE. In January, automatic sprinklers burst in storeroom of John E. Brown Manufacturing Co. and damaged goods. — Holyoke Paper Co. announced new and perfect method of making raw photographic paper. The *Springfield Republican* said "it is the result of about 5 years of experimenting and the expenditure of about \$130,000. Hitherto it has been supposed that no serviceable raw paper could be made in this country. In December, 1898, a combine of five American manufacturers of photo paper was announced, the purpose of which was to control the American sale of Rives & Steinbach's German paper; the Western Camera Co. refused to join the combination and have now secured the product of the Holyoke Co." *February.* Fire destroyed picker room at Connor Bros.' shoddy mill. — Deane Steam Pump Co., together with other factories and mills, shut down for several days owing to lack of coal. — American Quilt Co. incorporated; authorized capital \$50,000. — Baker-Vawter Co. of Chicago leased quarters for manufacture of office devices. — Standard Machine Co. retired from business; no successor. *April.* E. A. Gorman & P. E. Sullivan purchased the Kafir Cigar Co. — Holyoke Motor Works started and new machinery added. — Powers Paper Co. contracted for new machinery for the purpose of adding envelopes to product. — Chemical, Valley, Albion, and Esleek paper mills shut down on account of high water. — Merrick Thread mills enlarged; in December, decreased wages and ran nights. *May.* Weavers at Farr Alpaca Mill struck for increase; granted; in November and December, increased wages again. *June.* Yardmen at Lyman Mills struck for increase; later, doffers, spoolers, and ring spinners in No. 1 mill struck for an increase of 15 per cent and the following day entire mill shut down; in July, work resumed, strikers not gaining their demands; in October, ran nights; in December, No. 1 mill ran nights and doffer boys struck again for increase; compromised. — Weavers and spinners at Chadwick Plush Co. struck for increase; later, strikers returned, demand not granted; in November, Sanford Mills of Maine purchased plant to be run in connection with their Maine business.

July. In common with plumbers of other cities, those of Holyoke struck for increase; not granted, and in August, strike declared off. — Springfield branch of United States Envelope Co. consolidated with Holyoke branch. — Parsons & Greene Co. burned out and retired from business; no successor. — Reed boys at Chemical Paper Co. struck for increase; granted. — Wauregan Paper Co. shut down on account of dull trade. *September.* Connecticut River Manufacturing Co. shut down for repairs. — William Skinner Manufacturing Co. shut down on account of low water and subsequent breakdowns; new engine added; in December, completed new building and added new looms. — Beebe, Webber, & Co. leased outside quarters and set up 20 looms to accommodate increased orders. *October.* All the mills were affected more or less by lack of sufficient water. — Holyoke Plating Works sold to Arthur Cutting who started up the plant which had been idle for some time. *November.* Holyoke Machine Co. started its steam plant owing to scarcity of water. — Chas. Depping started a paper-ruling plant, with 5 machines and 12 hands. — Connecticut River division of American Writing Paper Co. started all its departments except finishing room which was transferred to the Riverside branch; 50 persons thrown out of employment. — A. Fergusson began foundation for new laundry and dyehouse, 2 stories, 50 x 90 feet. *December.* Trolley Track Co. began erection of machine shop, one story, 200 x 400 feet. — Germania Mills increased wages. — J. & W. Jolly began erection of new boiler house. — During the year, the following were absorbed by the American Writing Paper Co.: Albion Paper Co., Beebe & Holbrook, Connecticut River Paper Co., Crocker Manufacturing Co., G. R. Dickinson Paper Co., Esleek Paper Co., G. C. Gill, Holyoke Paper Co., Linden Paper Co., Massasoit Paper Co., Norman Paper Co., Parsons Paper Co., Riverside Paper Co., Nonotuck Paper Co., and Wauregan Paper Co.

Hopedale. In April, Draper Co. ran several departments nights; in May, molders struck and work began on addition to machine shop; in June, began erection of new building; in August and September, added new machinery and ran nights; also, closed contract for manufacture of rotary spinning ring, invented by Victor Boulanger; and in latter month began erection of new setting-up shop, 4 stories, 125 x 150 feet; in December, added new boiler.

Hopkinton. In January, Crooks, Root, & Co. started after nearly four weeks' shut-down; in June, shut down on account of accident to engine; in July, shut down one day

owing to absence of engineer; in August, cutters struck for increase. *February.* Cloutman, Dunham, & Co., shoes, shut down one week; in June, shut down one day, except sole-leather room; in December, consolidated with Milford Shoe Co., and closed local factory.

Hubbardston. In October, W. H. Jefferson's sawmill destroyed by fire. *November.* Idle plant of Star Blanket Co., which had been dissolved by Supreme Court in December, 1898, purchased by the Hygienic Blanket Co. and put in operation.

Hudson. In March, Robert H. Brigham of shoe manufacturing firm of F. Brigham & Co., died, aged 62 years. *December.* Apsley Rubber Co. began on foundation for new factory, 4 stories, 230 x 60 feet, brick and stone.

Huntington. In January, Massasoit Woollen Mills shut down during repairs; in May, shut down 10 days for repairs; in November, added new looms and increased wages; in December, leased Cushman Mill at Monson for extension of business. *July.* Chester Paper Co. shut down resuming in full in August under management of American Writing Paper Co. *November.* Chapin & Gould started foundation for new building, 2 stories, 104 x 30 feet, brick and stone; in December, rag room employes struck; places filled.

Hyde Park. In January, Brainard Milling Machine Co., Brainard Foundry Co., and John Becker Manufacturing Co., the latter of Fitchburg, consolidated under the name of Becker-Brainard Milling Machine Co. with authorized capital of \$500,000; the machinery was removed from Fitchburg to this town and plans prepared for new factory, 200 x 90 feet; in May, molders struck. — The idle morocco factory of Robert Frampton destroyed by fire. *February.* T. H. Gray & Co., shoddy, began operations in new mill built to replace one destroyed by fire; in December, picker and blower rooms damaged by fire. *May.* Readville Machine Co. granted demands of pattern makers for nine hour day. *July.* Willard Manufacturing Co. started foundation of building for manufacture of harness trimmings. *September.* Robert Bleakie Woollen Co. began erection of addition, one story, 60 x 80 feet; in November, installed finishing machinery. *December.* B. B. & R. Knight, cotton goods, increased wages.

Ipswich. In January, Millett, Woodbury, & Co., shoes, discontinued factory and removed to Beverly; later, factory leased to Burke & Bamford of Salem for five years; in February, operations begun; in October, firm retired from business and plant closed. *September.* Ipswich Mills ran two nights a week.

Kingston. In July, L. E. Ford & Co. added 20 tack machines to plant.

Lancaster. In June, Lancaster Manufacturing Co. shut down on account of low water; mill had been running nights. *December.* Byron E. Simpson of Millbury purchased shoddy mill of Kelley & Boland.

Lanesborough. In October, Berkshire Co-Operative Glass Co. incorporated under Maine laws to manufacture glass; authorized capital, \$50,000; started up.

LAWRENCE. In January, John W. Barlow Co., loom pickers, etc., added new engine; in April, moved into new building and ran nights. — Pemberton Co. ran full force full time; in March, napping machine damaged by fire; in July, shut down 3 days for vacation; in October, shut down owing to accident. — Atlantic Cotton Mills ran on short time; in March, increased wages; in April, added new spinning frames, drawing frames, looms, and pickers; in July, shut down 3 days for vacation; in December, added new looms and increased wages. — Dillon Machine Co. ran nights. *February.* Henry Ringney established blacksmithing business. — Kress Brothers, carriages, ran on full time. — Several of the large mills affected through lack of coal. — J. Renick, patterns, retired from business; no successor. — Iron molders at Merrimac Iron Foundry struck for increase. — Mason Safety Tread Co. began moving its fixtures to new quarters at Lowell. — L. Sprague Co., bobbins, etc., ran on full time; in March, purchased land for new factory; in August, absorbed by United States Bobbin & Shuttle Co. — Lawrence Dye Works ran nights; in April, leased plant of Massachusetts Bleach & Dye Works at North Andover; in May and July, increased force; in October, began erection of brick building, 60 x 175 feet, also leased winding and spinning departments of Prospect Woollen Co.

March. Pacific Mills increased wages; in April, added new water wheels; in June, upper mill stopped 30 minutes on account of accident to machinery; in July, shut down 3 days for vacation; in September, made repairs; in November, shut down one day on

account of accident, and print works damaged by fire; in December, increased wages. — Arlington Mills stopped temporarily on account of accident to machinery; in May, shut down portion of plant for stock taking; in July, shut down 3 days for vacation; in September, shut down spinning department owing to accident; in December, shut down part of weaving department owing to scarcity of material, and increased wages. — D. W. Pingree & Co.'s box factory destroyed by fire; in July, rebuilt and occupied. — Emmons Loom Harness Co. damaged by fire. — Washington Mills added new wool scouring plant; in April, shut down for stock taking; absorbed by American Woollen Co.; in May, operatives in mending room and filling carriers struck for increase; granted in first instance, refused in second and places filled; in July, began specializing work; shipped its woollen machinery to Collins Mills, Dracont; local mills to produce only worsted goods; shut down portion of plant 3 days for vacation; in October, portion of plant shut down owing to low water; in November, No. 3 mill shut down owing to accident. *April.* Kimball Bros., shoes, increased wages. — Molders at Davis Foundry struck owing to discharge of fellow workman; later, returned to work; in August, struck for increase; granted. — Stanley Manufacturing Co. started on full time on order for 50 horseless carriages. — Everett Mills shut down on account of high water; in July, shut down 3 days for vacation; in August, shut down for 2 weeks' vacation; in December, increased wages. — E. Frank Lewis, wool scouring, ran nights; in July, ran nights; in September, shut down for repairs; in November, damaged by fire. — Lawrence Machine Co. damaged by fire; in June, ran nights.

May. J. H. Horne & Sons Co. began on foundation for addition to plant; in July, ran nights. *June.* Carding and spinning departments of Geo. E. Kunhardt's Mill resumed night work; foundation for new mill laid; in December, completed, and new looms set up. — Frederick Butler, proprietor Butler Woollen Mills, died, aged 72 years. *July.* Employés (10) at Farwell Bleachery struck for increase; not granted. *August.* Molders at foundry of Wm. R. Hart demanded increase; granted. *September.* Globe Worsted Mills made additions. *October.* Board of Health granted permit to Beach Soap Co. to build under certain restrictions. *November.* Butler File Co. retired from business; no successor. — Hartley Wool Scouring Mill damaged by fire; in December, repairs made, new machinery added, and operations resumed. — Mitchell & Sirois purchased carriage manufactory of J. W. Joyce estate, to continue. — Edwin W. Barton, founder of Emerson Manufacturing Co., died. *December.* Bacon Paper Mills sold to C. W. Rantoul, Jr., secretary of the American Paper and Pulp Association. — During the year, T. J. Hale, bobbins, etc., absorbed by the United States Bobbin & Shuttle Co.

Lee. In January, Central Berkshire Brick Co. formed for manufacture of brick; in May, began operations. — Employés at Thistle Wire Works struck because stove was not set up in loom room; stove was finally set up, weather moderated, and work was resumed; in October, made repairs, and ran nights; in November, ran portion of plant nights. *February.* Many of the mills obliged to shut down owing to scarcity of coal. — Wm. Gray & Sons, stone, started up after a protracted shutdown; in April, increased force. — Valley Mill, paper, began work on addition; in March, shut down while new machinery was set up; in April, started up after repairs; in November, disposed of old calenders to parties in Wisconsin and 4 dryers shipped to Japan. *March.* F. S. Curtis' grist mill shut down owing to dull trade. — Smith Paper Co.'s machine shop ran nights. — Columbian Mill installed new engine. *April.* Eagle Mills made repairs and added new finishing room; in May, finishing room put in operation; in June, calender room ran nights; in July, shut down while flume was reconstructed, and later, calender room shut down owing to lack of supplies; in August, new water wheels added and main dam repaired; in November, shut down owing to explosion of boiler. — Lee Marble Works opened another quarry; in July, increased force; in October, built addition on sawmill; in November, new channeling machine added. *May.* W. H. Gross shipped his quarrying machinery, boiler, and derricks to Alford to open up new quarry. *July.* Stock and machinery of Lee Woollen Co. sold at auction in small lots. *August.* Hurlbut Stationery Co. shut down for stock taking. — Eaton, Dikeman, & Co. added new generator. *September.* C. C. Benton of Benton Bros., paper manufacturers, died, aged 65 years. *October.* Old quarry of Lee Marble Co. started up by W. N. Noonan of Ogdensburg, N. Y. — Clark & Spencer's machine shop shut down on account of low water. *November.* Reconstruction of lower pulp mill of Smith Paper Co. completed and new machinery added. — During the year, American Writing Paper Co. absorbed the Eaton, May, & Robbins Paper Co., G. C. Baird, Hurlbut Paper Co., and Hurlbut Stationery Co.

Leicester. In February, old Lakeside Mill torn down. *March.* Murdock factory of American Card Clothing Co. started on full time; first time in 2 years; in May, ran

nights. *July*. Philip Pfaffman of New York purchased Lucien Butler's satinnet mill. *August*. Unoccupied card mill of W. & J. Whittemore destroyed by fire. *October*. Geo. W. Olney Woollen Co. shut down temporarily owing to accident to machinery. *November*. Eli Collier, woollens, shut down several days owing to changes made in the grade of goods. *December*. Henry A. Denney, retired manufacturer of card clothing, died at Belchertown, aged 97 years.—Columbian Manufacturing Co. increased wages.

Leominster. In January, Whitney Reed Chair Co. added baby carriages to product.—J. E. Whitney began manufacture of patent anti-rattling thill coupler.—Geo. A. Gane Shirt Co. shut down two weeks, except laundry; in July, shut down for stock taking; work begun on foundation for addition, 50 feet long, 4 stories high, to be used as a laundry; in September, completed and occupied; in October, increased force. *February*. Danforth Chemical Co. began erection of new factory.—Geo. T. Lincoln, retired horn goods manufacturer, died, aged 68 years.—Leominster Shirt Co. shut down indefinitely; in August, Cluett, Peabody, & Co., of Troy, N. Y., leased plant and began refitting for manufacture of shirts.—Repairs made at piano case factory of F. G. Smith; in August, completed new engine house.—Leominster Worsted Co. resumed on full time; in March, added new looms; in April, added cards, mules, and more looms; in June, added more looms; later, erected new picker and stock house, one story, 54 x 107 feet. *March*. Tilton & Cook enlarged their comb shop by a two-story addition, 30 x 30 feet; in June, 9 rubbers struck for increase; places filled; in September, ran nights.—Earl Company organized to manufacture combs and foundation for new factory started. *April*. A. W. Colburn & Co. began addition to factory, 24 x 36 feet, for manufacture of horn and celluloid goods under control of Frederick Stewart. *May*. Richardson Piano Case Co. reduced wages in finishing department.—National Fibre Co. resumed manufacture of leatherboard; later, factory damaged by fire.—Girls employed by B. F. Blodgett & Co. struck on account of forewoman; adjusted. *June*. Rubbers at Newton & Merriam struck for increase; places filled; in September, ran nights. *July*. Wachusett Shirt Co. shut down for 2 weeks' vacation.—Celluloid factory of W. S. Reed Co. destroyed by fire.—Phelps & Harrison, tanners, moved to Bethel, Vt.; plant leased by J. B. Murray & Co. formerly of Woburn. *September*. Damon, Howe, & Co., ran nights.—E. M. Rockwell, woollen goods, ran nights, in October, ran nights. *October*. Union Manufacturing Co., combs, ran nights.—Bay State Comb Co. completed foundation for new factory; in December, completed and occupied.—Pickering, Metcalf, & Co., formed to manufacture combs.—Peixotto, Gray, & Co. formed to manufacture horn goods; in November, began operations in new factory. *November*. Star Button Co. leased temporary quarters to accommodate increased business.

Leverett. In October, Frary & Gates, boxes, sold to Frary, Field, & Co.

Longmeadow. In November, Hennessey Brick Yard sold to Springfield Brick Co.

LOWELL. In January, Lowell Machine Shops completed repairs, and after 18 months on short time, resumed on full time; 40 male employés added to foundry force; in March, ran portion of plant nights, and increased force; in July, ran nights.—Edward P. Woods of Woods-Sherwood Co., wire goods, died.—Mason Safety Tread Co. began erection of new factory; in February, began moving fixtures from Lawrence; in March, factory completed and work begun.—Middlesex Co. added new looms; in March, reduced running time from 58 to 40 hours per week; in April, increased wages; weavers struck for more pay; shut down, with exception of combing, finishing, and wool departments; later, strikers returned and company agreed to restore the 1898 outdown; in July, No. 3 mill shut down on account of dull trade.—Lowell Manufacturing Co. added new looms; in May, began repairing canal bank causing temporary shutdown; in July, ran yarn and Axminster departments on 4-days time; in August, creelers struck for increase.—Several weavers of Merrimack Manufacturing Co. struck because of notice that wages would not be increased February 1; in February, spinners demanded discharge of an overseer, with the alternative of a strike; overseer resigned; corporation began changing over mules to frames; later, 11 winders in the white room of the print works demanded restoration of outdown of 1898; refused, struck, and print works shut down temporarily; in April, increased wages; shut down on account of high water; in July, ran overtime; in September, added new boilers; in October, put new chemical plant in operation manufacturing its own chemicals, and ran nights; in November, sold outlying real estate and tenements; in December, increased wages.—Faulkner Mills ran on part time; in March, increased

to 58 hours; in May, absorbed by American Woollen Co.; in July, ran nights. — Several girls employed in No. 4 mule room of Hamilton Manufacturing Co. struck for increase; in April, increased wages; in October, several boys struck.

February. Massachusetts Cotton Mills put in new frame spindles; in April, increased wages, and shut down on account of high water; in June, 20 mule spinners struck for an additional increase; mill began substituting frames for mules; in July, began manufacture of duck of a quality not made since the Civil War; ran overtime; in December, increased wages. — Tremont & Suffolk Mills shut down No. 5 mill owing to accident to engine; in April, increased wages; in June, storehouse destroyed by fire; Lawrence mill discontinued night work owing to low water; in August, ran nights; in September, made additions; increased capital stock from \$1,500,000 to \$2,000,000; in December, increased wages. — United States Cartridge Co. ran Sundays; in November, started on $\frac{3}{4}$ time. — Boott Cotton Mills shut down temporarily owing to accident to machinery; in April, increased wages; shut down on account of high water; in July, ran overtime; in September, added new boilers; in November, began construction of new storehouse; ran nights; in December, increased wages. — Shaw Stocking Co. cut down wages on coarse and medium grades and advanced on highest grade. *March.* Chas. L. Stover fitted up new factory for manufacture of shoes. — Sterling Mills, which had been running on 38-hour time increased to 58 hours; in August, shut down for repairs. *April.* Pevey Bros., iron foundries, increased wages; in May, molders struck. — Lawrence Manufacturing Co. increased wages; in September, made additions; in December, increased wages. — Appleton Co. increased wages; in September, added new looms and spinning frames, completed new boiler house, and added 4 new boilers; in November, began erection of new storehouse; in December, increased wages. — Eagle Foundry Co. partially destroyed by fire; in May, molders struck; in June, started up, plant rebuilt. — American Bolt Co. damaged by fire. — C. I. Hood & Co. ran nights.

May. Massachusetts Mohair Plush Co. ran nights; began erection of new building, 100 x 50 feet, 2 stories, for sorting and storage; extra combers started; in October, added new machinery. — Molders employed by Doherty Bros., Albert F. Nichols, Union Iron Foundry, Cole's Foundry, and John Ryan & Co., struck for increase; the latter granted demands in September; Doherty Bros. granted increase at once and their molders remained at work. *June.* Under the auspices of the Associated Factory Mutual Insurance Companies, a test was made to ascertain the salvage of cotton, after a fire, of the various classes of baling; the test was made on the ordinary square bale, the round bale known as the "Lowry bale," and a round lap bale, baled by the American Cotton Co. — Ferdinand Rodliff died, aged 93 years; he had been connected with the Hamilton Mills for 72 years and though retired from active service had been carried on the pay roll since his retirement as Superintendent. — W. H. Kimball, stairs and house finish, sold to Bean & Dunbar. — Lowell Felting Mills closed out business; no successor; land and buildings sold to Lowell parties and machinery and good will to New Jersey parties. — Local plant of Boston Paving Co. destroyed by fire; in July, employes struck over dissatisfaction with pay and hours. *July.* All the cotton mills shut down from the 1st to the 5th. — Waukenhose Co. reduced capital stock from \$300,000 to \$150,000. *August.* Robinson's Foundry shut down for repairs. — Work begun on addition to factory of J. C. Ayer Co., 4 stories, 50 x 50 feet. — W. H. Parker & Son absorbed by United States Bobbin & Shuttle Co. — White Bros., leather, absorbed by American Hide & Leather Co.

September. Lowell Hosiery Co. put new wage scale into effect and ran nights; in December, increased wages. — Malcolm D. Brown, hosiery, began erection of addition. — Kitson Machine Co. posted notice to the effect that a dividend of 2 per cent would be given each employe engaged in manufacture of pickers when over 30 such machines were turned out in a month; in December, increased wages. — Weavers at Belvidere Woollen Co. struck for increase; in October, demand granted. — Fire destroyed plants of Moxie Nerve Food Co. and Standard Bottling Co.; latter plant rebuilt on smaller scale; business of former concern to be carried on in future at Boston factory. *October.* Lowell Textile Co. incorporated under Massachusetts laws to manufacture towels; authorized capital, \$20,000; in November, began operations. — Pevey Cotton Mills purchased by Amrayton Paper Tube Co.; in November, began alterations in plant. — Hooper Knitting Co. incorporated; authorized capital, \$100,000; new building begun. — Lasters employed by J. M. Stover struck over employment of 2 Greeks. — Fire destroyed building known as Old Card Clothing Mill; occupied by manufacturers of mill supplies in various lines. *November.* All the leather workers employed at the White branch of the American Hide & Leather Co. struck because of a reduction of wages in the beaming department; returned to work, old scale of wages and reimbursement for the loss in pay since cutdown went into effect being granted. — Old unoccupied American Bobbin & Shuttle Mills sold to Upham & Thayer,

manufacturers of wooden specialties. *December.* Fire damaged box factory of Frank P. Cheney. — Albert B. Plympton, retired sash and blind manufacturer, died, aged 78 years.

Ludlow. In October, Ludlow Manufacturing Co. started construction of new mill, 3 and 4 stories, 433 x 128 and 145 x 70 feet, brick and steel; later, another mill, 3 stories, 126 x 133 feet, was started; during the year, erected 26 cottages and built 8 new brick stock-houses.

LYNN. In January, 32 pullers-on at A. E. Little & Co.'s factory struck owing to dissatisfaction with pay and delivery of work; refused; 8 machine lasters demanded an increase, also, which was granted; later, 15 hand lasters struck through sympathy; finally, all strikers returned to work. — State Board of Arbitration decided that, in view of the small wages paid stitchers of Bailey, Curtis, & Co., and from comparisons made with wages paid in other factories making the same grade of goods under similar conditions, there was no good reason for any reduction, and recommended the payment of the same prices as previously paid; later, firm removed to larger quarters. — Munsey Shank & Counter Co. succeeded to Munsey Shank Co. — Old shoe factory of Burpee Rumsey sold at auction to James T. Lennox, morocco manufacturer; in September, Burpee Rumsey re-established as a shoe manufacturer. — James Houghton & Sons, findings, moved to larger quarters. — Daniel H. Murphy of Murphy, Shepherd, & Co., shoes, died, aged 55 years. — Standard Crayon Co. began erection of one-story addition, 30 x 40 feet. — Ed. J. Phelan, shoes, sold machinery and factory fixtures. — Farwell & Hurley, cut soles, moved to larger quarters. — The Wm. F. Morgan Co., shoes, shut down for stock taking. — Joseph Dickinson, slippers, shut down one week for stock taking resuming with full force on full time. — Sparks & Murphy established manufacture of cut stock; later, went out of business; no successor. — T. A. McKeown of the American Slipper Co. disposed of his interest to James Dickinson who admitted Miss M. E. Thompson to partnership and continued. — Alley & Austin, shoes, dissolved; A. S. Alley continued. — Pierce & Sibley, slippers, moved to larger quarters. — Clements, Porter, & Co. established manufacture of wood heels. — Sylvester & Berry established manufacture of shoes. — Berwick Shoe Co. of Berwick, Me., purchased plant formerly run by E. G. Lane & Co. — Maurice Flynn, shoes, shut down owing to accident to machinery; in August, retired from business; no successor. — Osborne & Lee, shoes, dissolved; F. E. Lee continued. — Downs & Watson Co., shoes, added new machinery. — Hurley & Cashman, shoes, dissolved; J. M. Hurley continued as Hurley Shoe Co. and J. L. Cashman joined E. T. Wills under name of Lynn Cork Sole Co. — Lynn Heel Co. succeeded by W. E. Goldthwaite; in July, succeeded by Goldthwaite Bros. — T. C. Johnson & Sons retired from cut-sole business; in April, began manufacture of molded leather-board counters.

February. R. E. Redmond, shoes, retired. — Munsey Shank Co. increased capacity. — Lasters struck at slipper factory of Joseph Dickinson; places filled. — Brophy Bros. Shoe Co. shut down temporarily owing to explosion. — F. A. Phillips, shoe tips, retired; no successor. — Lasters at V. K. & A. H. Jones struck; in March, settled, advance granted. — Henry F. Chase, soles, sold to T. C. Johnson & Son. *March.* Williams, Clark, & Co., shoes, ran nights. — Copeland, Eldridge, & Co. retired; no successor. — Arthur G. Walton of Wakefield bought F. M. Blanchard Shoe Co. — Arthur E. Gloyd, shoes, ran nights. — L. J. Richards & Co. added stitching plant; later, went out of business; no successor. — Parker Bros. Manufacturing Co. incorporated to manufacture shoe findings; authorized capital \$30,000. — Geo. E. Marsh & Co., soap, increased capacity. — Lasters at W. J. Creighton & Co.'s shoe factory struck for advance. — Martin H. Hood, retired shoe manufacturer, died, aged 86 years. — Fire damaged shoe factory of Frye & Co.

April. Seven lasters employed by Eckhardt & Ford ordered out by their Union on account of differences concerning wages; firm decided to run free shop. — Hutchins & Turner established manufacture of shoe staying, etc. — North Stain & Blacking Co. removed to larger quarters as did Tyler & Richardson, manufacturers of cut stock. — Daniel H. Shillaber re-established as a shoe manufacturer. — J. B. Renton Co., shoes, ran nights. — Ball Foundry Co., new firm, leased idle plant to manufacture machinery castings. — Everett E. Libbey, soles, retired; no successor. — J. P. Crosscut, soles, retired; no successor. *May.* V. K. & A. H. Jones Co., shoes, incorporated; authorized capital \$40,000. — General Electric Co. locked out its pattern makers refusing to grant increase in wages demanded and the nine-hour day. — A. B. Lovering granted nine hours to his pattern makers. — Geo. Taylor, inventor Taylor adjustable shoe, died, aged 81 years. — Evans & Foley established manufacture of top lifts. — Reduction of wages took place in

shoe factory of Francis C. Stickney. *June.* Lasters employed in all shoe factories notified employers that they proposed to take a half holiday each Saturday until the first Saturday in November.—Walton & Logan Co. incorporated to manufacture shoes; authorized capital \$20,000.—Three rand tackers struck at J. B. Renton Co.'s cut stock factory owing to a refusal of firm to increase their pay one dollar per week; later, others struck through sympathy but returned to work; girls were employed to take place of original strikers.—American Slipper Co. moved to Malden.—Millan & Croscup, boxes, sold to F. E. Vincent.—T. Kiely's Sons, shoes, retired; no successor.

July. Geo. A. Creighton & Son, shoes, who moved to Danvers in 1898 returned to this city.—Glaziers employed by Thos. A. Kelly & Co., A. B. Hoffman, Weber Leather Co., and P. Lennox & Co. struck for increase in wages.—P. Lennox & Co. of Peabody leased and opened factory formerly occupied by Moulton Leather Co.; new machinery added.—General Electric Co. purchased 30 acres of land for addition to steel plant; foundation begun in December.—Putters-out in Thos. H. Bresnahan's factory struck for increase; granted.—Downs & Watson Co. added new machinery; in August, cut down wages of lasters.—Young & Sampson, shoes, changed to Young, Sampson, & Hollis.—Joseph Dickinson, slippers, added new machinery.—J. F. Vella, first manufacturer of wooden heels, died; business taken by Vella Star Heel Co.—Old Ashcroft factory leased by Illinois Leather Co.—Equitable Auto-Truck & Power Co. purchased land and buildings.—H. E. Pinkham Shoe Co. moved here from Portland, Me.—C. H. Richardson, shoes, moved into larger quarters.—Murray Shoe Co. dissolved as a firm and reorganized as a corporation.—William Hurley and J. L. Richardson, shoe manufacturers, died. *August.* Bay State Wall Paper Co. leased plant for manufacturing.—L. S. Johnson & Co. locked out turned workmen pending acceptance of new list; later, accepted list, and work resumed.—Cutters at D. A. Donavan & Co.'s factory struck for increase; compromised.—Hoag, Heath, & Co. added new stitch separator.—Copeland & Co., shoes, began closing out business; in October, sold out to M. V. Bresnahan.—Fire damaged portion of plant of General Electric Co.—Chas. B. Lord, shoes, died; business sold to Francis C. Stickney.

September. Tyler & Richardson removed to larger quarters.—C. H. Henderson & Co., cut soles, succeeded by C. H. Henderson & Co.—Roberts & Dwinells Co. succeeded by W. H. Roberts.—P. H. Nourse, cut stock, admitted Chas. Howe.—Foot Form Shoe Co. (started in January) dissolved.—Belonga & Leonard, shoes, increased capacity.—F. B. Abbott and Munsey Shank Co. shut down for repairs.—Lasters at Melanson & Currier's shoe factory struck; settled among workmen.—Geo. K. Peyear, morocco manufacturer, died, aged 74 years. *October.* Irving T. Austin, inner-soles, and Bowen Heel Co. moved to larger quarters.—Shoe machinery of W. S. Boyce & Co. sold at auction.—John Lancy, Jr., shoes, moved here from Marblehead.—A. & A. D. Fisher granted new price list to turned workmen and A. E. Little & Co. increased wages of lasters.—Forstitch Leather Co. incorporated to manufacture artificial leather; authorized capital, \$10,000.—Turned workmen of Joseph Caunt & Co. struck because firm informed men that having granted a 25 per cent increase they should require a 25 per cent better shoe; later, men returned to work.—General Electric Co. ran nights.—Lasters at Frank Keene Co.'s factory struck because firm asked men to add an extra shank without extra pay.—Chick & Johnson established manufacture of cut soles.—B. Warren Skinner, soles, retired; no successor.—Jas. W. Hall, molded shanks, died; in December, business taken by J. W. Hall Shank Co.—Fire damaged stitching room of Welch & Landregan.

November. Arthur E. Gloyd, Standard Shoe Co., Strout, Sager, & Co., and C. H. Ingalls & Co., shoes, moved to larger quarters.—Lasters at C. W. Varney & Co.'s struck for increase; compromised; later, struck again, claiming a grievance over price tags; later, advance of one-half cent granted and work resumed.—Explosion damaged dye-house of Geo. H. Johnson & Co.—H. D. Floyd began manufacture of cut stock.—Dore & Fairchild, shoes, succeeded Benjamin Dore.—Walton & Logan Co., shoes, increased capital stock \$20,000.—Howe, Cushman, & Stocker began manufacture of shoes.—Joseph F. Hoyt admitted to Atlas Crayon Co.—Jeremiah Wentworth, box manufacturer, died, aged 78 years.—Fire damaged box factory of Geo. H. Allen. *December.* Libby & Estes, stains, dissolved; Justin P. Libby continued.—John A. Hayes Foundry Co. incorporated under Maine laws to succeed to business of Union Iron Works; authorized capital \$6,000.—Waverly Shoe Co. of Laconia, N. H., moved to this city and re-organized as Bemis & Wright.—Thomson-Houston Electric Co. began erection of addition to steel foundry.—Belonga & Leonard shut down for repairs and stock taking.—Welch & Landregan shut down for stock taking.—E. G. Emmons, boat builder, enlarged plant.—Brophy Bros. Shoe Co. increased capacity.—W. W. Parker of Brewer, Parker,

& Co., died. — Chas. S. Main, machinists' work, died. — Fire damaged plants of Chas. H. Ingalls & Co., shoes; C. H. Richardson, slippers; and T. P. Nichols, printer. — R. Y. Russell & Son Co., folding boxes, moved here from Saugus.

MALDEN. In March, John J. Holman, dye works, succeeded by West & Shachter. *June.* American Slipper Co. moved from Lynn to this city. — Boston Moulding Co.'s mill destroyed by fire. *December.* Geo. P. Cox Last Co. began new storage shed, 36 x 150 feet, 2 stories.

Mansfield. In January, Mansfield Co-operative Bank sold the Steam Windlass building to Bibber-White Co., manufacturers of copper and insulated wire; in March, this company consolidated with Fisher & Cramphorn of South Boston, moved plant to this town, and incorporated as Atlantic Manufacturing Co.; in May, repairs made and operations begun. *February.* Simon W. Card, founder of the S. W. Card Co., died, aged 68 years. *May.* F. M. & F. L. Cobb, jewelry, began construction of addition 33 x 40 feet, 2 stories. — Machinery of old Burpee Rumsey shoe plant sold at auction. *December.* S. W. Card Manufacturing Co. added new machinery.

Marblehead. In February, Brown & Denning, shoes, moved here from Beverly. *April.* Symonds, Littlefield, & Coates, succeeded to business of J. C. Peach, organized as North Shore Shoe Co., and began operations in June. *September.* F. A. Parker of F. A. Parker & Co., shoes, died. *October.* John Lancy, Jr., shoes, moved to Lynn. *December.* Magee Bros. began manufacture of shoes.

MARLBOROUGH. In January, work resumed in factory of S. H. Howe Shoe Co. — L. E. Clancy, shoes, moved machinery to Medway and formed partnership with G. F. Madden. — Rice & Hutchins moved portion of plant to Worcester. — At a meeting of shoe manufacturers "a hope was expressed that something could be done to end the strike on the following lines: 1. Notices now posted in factories to remain. 2. New price list to stand for one year. 3. Manufacturers to deal directly with their help. 4. None of the present employes to be discharged to make room for strikers. 5. Any differences that may arise, not covered by posted notices or new price list, and cannot be settled at Marlborough, shall be referred to the State Board of Arbitration for final adjustment." In February, a temporary injunction was issued by the Supreme Court, at Boston, against the strikers, in the suit brought by the manufacturers in accordance with the following agreement:

Commonwealth of Massachusetts,

Suffolk, ss. In Equity.

Rice & Hutchins, Incorporated, vs. Murray et al.; John A. O'Connell vs. same; S. H. Howe Shoe company vs. same; John A. Frye vs. J. H. Murray et al.

Agreement of parties — It is agreed by the parties to the above entitled suits that until the further order of the court a temporary injunction may issue restraining the defendants and each of them, their agents or attorneys, from interfering by acts of violence or intimidation with the business of the plaintiffs or their employes. The defendants, however, disclaim, any acts of violence or intimidation in the past or any intention to commit such acts in the future, and enter into this agreement in order to try the issues presented by the bill of complaint fully at a hearing in the merits at some future time, and this agreement is not to be considered or treated as any admission of illegal conduct on the part of the defendants or any of them.

FRANCIS P. CURRAN,

Attorney for Respondents.

HURLBURT, JONES, & CABOT,

Attorneys for Plaintiffs.

Let an injunction issue in accordance with the above agreement.

JOHN W. HAMMOND, J. S. J. C.

February. J. F. Desmond Shoe Co. issued following notice: "The shoe business to-day is in such a condition that we find it necessary to make a reduction in wages. On and after March 2, we will make a new price list." A strike resulted and in March it was agreed to withdraw the new schedule and restore old wages on condition that, if, after a trial, it was found the business could not be carried on at a profit, the matter should be referred to the State Board of Arbitration; later, the company shut down permanently, and in October, Johnson, Dale, & Aldrich of Natick leased factory. *May.* A number of strikers returned to work in the several factories and while the strike was not officially declared void, it was understood that the Union had given up its contention.

Maynard. In January, Assabet Manufacturing Co. shut down for stock taking occasioned by recent assignment; in April, plant sold to American Woollen Co. for \$400,000.

MEDFORD. In February, Glenwood Works incorporated; authorized capital, \$40,000. *December.* Caleb Mills, retired soap manufacturer, died, aged 88 years.

Medway. In January, Madden & Clancy formed to manufacture shoes; later, incorporated under Maine laws as Madden Boot & Shoe Co.; authorized capital, \$10,000; in May, made samples. *April.* A. M. Smith, shoes, shut down 2 weeks. — Old shoe factory of L. S. Daniels sold and torn down. *May.* Winthrop Manufacturing Co. added new gasoline engine. *July.* New England Awl & Needle Co. shut down for 3 weeks' vacation. *August.* W. A. Jencks, retired shoddy manufacturer, died. *September.* Hirsh & Park, straw goods, ran nights. — A. M. Smith resumed operations on season's run.

Merrimac. In March, H. G. & G. W. Stevens, carriages, began running on full time. *July.* William Chase & Son, carriages, destroyed by fire.

Methuen. In January, work at Methuen Co.'s mill affected by absence of large number of operatives afflicted with La Grippe; completed improvements; in February, shut down owing to scarcity of coal; in April, increased wages; in June, added 75 new looms; in July, shut down one week owing to accident to machinery; in November, shut down portion of plant five days owing to accident to machinery; in December, added new engine; fire damaged picker room. — Methuen Hat Co. incorporated to succeed to the business of J. M. Tenney; authorized capital, \$15,000; in December, shut down for repairs. — Swain Manufacturing Co., knit goods, shut down for 3 weeks; in June, shut down owing to dull trade; in July, shut down owing to scarcity of yarn; in September, resumed operations. *February.* Arlington Mills ran nights. — Tremont Worsted Co. shut down owing to scarcity of coal; in April and July, ran nights. *April.* Engines, boilers, and shafting set up in Methuen Napper Clothing Co. *July.* Knitted Fabrics Co. added new machinery to dyehouse just completed; in December, assumed control of mill of Swain Manufacturing Co. — Jowett's yarn mill ran nights; in August, portion of mill continued night work; fire damaged picker room and mill shut down owing to accident to engine.

Middleborough. In January, Hathaway, Soule, & Harrington, shoes, added new machinery and employed additional help. — C. H. Alden & Co., shoes, removed to Abington. *May.* Theo. Leonard's sawmill closed for season. — New shingle machine added to C. N. Atwood's mill. *November.* Star Woollen Mill sold by auction to F. S. Farwell of Farwell Worsted Co., Central Falls, R. I.; mill had been shut down for 4 years; repairs begun.

Middlefield. In July, Bancroft Paper Mills shut down 3 days for vacation; later, shut down for repairs. — Middlefield Quartz Mill Co. built new kiln.

Middleton. In July, engine house of Merritt Electric Co. destroyed by fire.

Milford. In January, Carroll-Hixon-Jones Co., straw goods, ran nights. — Eben Brown, needles, shut down temporarily owing to accident to machinery. *March.* Clapp, Hucks, & Temple, shoes, ran nights; in May, shut down temporarily owing to accident. *April.* Magid-Hope Silk Co. incorporated; authorized capital, \$300,000, and purchased old shoe factory building of Colburn, Fuller, & Co.; later, increased capital stock, \$200,000; in July, put in new machinery; in September, exhibited operations of its silk-opening machines; in November, put in new boilers. — W. P. Roberts erected building to be used as a cigar factory; in May, completed. *May.* Franklin Iron Foundry shut down one day; in June, completed new addition, 40 x 70 feet, one story. *July.* DeGroote Manufacturing Co., edge tools, ran nights. *September.* Shea Granite Co. reduced force and Norcross Bros. increased force. *December.* Milford Shoe Co. consolidated with Cloutman, Dunham, & Co. of Hopkinton; No. 1 factory shut down on account of accident and No. 2 for stock taking.

Milbury. In January, Bowden Felting Mills incorporated; authorized capital, \$50,000; in April, ran nights and added new engine; in July, ran nights; in August, increased capital stock to \$75,000; in September, ran nights; in December, ran nights. —

Millbury Cotton Mill started to run out stock pending an indefinite shutdown; in March, shut down; in April, started up on fresh supply of filling, continuing to run out stock; in May, shut down indefinitely; in October, leased by Edw. F. Rice & Co. formerly of West Boylston; in December, started up. — Wheeler Cotton Mills sold to Union Linen Co. of Portland, Me.; in March, new machinery installed and preparations begun to manufacture; in May, ran on full time; in June, added new looms; in November, added more new looms; in December, shut down on account of low water. — W. A. Harris and H. M. Goddard began season's ice harvesting. *February.* E. H. Sweet began manufacture of woven cloth hammocks under name of Comfort Hammock Co.; in December, shut down owing to business complications. — Millbury Scouring Co. ran nights. — John Rhodes Warp Co., after having been on half time for over a year, started on full time; in July, resumed operations after a shutdown of several weeks. — Woollen mill of E. Hoyle & Son which had been shut down for two months resumed on full time, spinning and carding departments running nights; in June, began on samples for winter goods; in September, ran carding and spinning departments nights; in October, ran nights; in November, ran nights. *March.* Whitney, Macduff, & Co., linen thread, dissolved. *April.* F. A. Lapham of Worcester leased Atlanta Mills which had been idle since 1895; in May, started up looms. *May.* Weavers at Mayo Woollen Co. struck for increase; compromised; in July, ran nights, also operated cards in idle Portsmouth Mills, and increased wages; in September, weavers struck against certain workman; places filled; in December, shut down on account of accident. *June.* C. J. Aldrich, satinets, shut down for repairs and vacation; in October, started up after a shutdown of 3 months; later, mill destroyed by fire; in December, began erection of new mill, 80 x 100 feet, 4 stories. *July.* Martin foundry leased by Globe Foundry Co. of Worcester; plant had been idle for a number of years; repairs made and started up. *August.* Portsmouth Mills sold for \$18,000 to Amos Armsby. *September.* Geo. N. Smith formerly owner of Atlanta Mills, died. — Koted Silk Underwear Co. incorporated under New Jersey laws, to manufacture silk-lined underwear, etc.; authorized capital, \$75,000; Portsmouth Mills leased. *October.* H. T. Merriam's foundry destroyed by fire; in November, began foundation of new plant, 40 x 100 feet, one story; in December, completed and operations begun.

Millis. In February, P. A. Waite sold to the American Felt Co.

Monson. In February, R. M. & Theo. Reynolds, straw goods, began to run out stock on hand; in April, shut down for balance of year. — Dwight W. Ellis, woollen goods, died, aged 75 years. *April.* Rufus Flynt, treasurer Flynt Building and Construction Co., died, aged 43 years. *July.* Old North Monson Mill property purchased by Geo. C. Flynt; original mill was a 4-story building built about 1820. *August.* Cutters at W. N. Flynt Granite Co. struck; paid off and discharged. *October.* S. F. Cushman & Sons began wool sorting at their Home Mills, preparatory to starting up; in December, mill leased by Massasoit Woollen Mills of Huntington. — Daniel G. Potter, retired soap manufacturer, died, aged 82 years. — During the year Heimann & Lichten built an addition and alterations made at Ellis Mills.

Montague. In January, a petition was filed in the office of the clerk of courts, Greenfield, asking the Supreme Court to dissolve the Turners Falls Shoe Co. and legally close up its affairs. The company was organized in 1890 with a capital stock of \$40,000 which was later increased to \$50,000 and was used up in the business. — The name of the Turners Falls Paper Co. was discontinued, to be known as a part of the Montague Paper Co.; in October, shut down for repairs; in December, ran nights. — Marshall Paper Co. made an assignment but at a meeting of the stockholders the assignment failed of ratification. The District Court at Boston declared the company bankrupt but before this, the directors had leased the mill and machinery to F. L. Miner, the shipping clerk; in December, started up on orders. *April.* John Russell Cutlery Co. increased running time from 8 to 9 hours per day; in May, shut down for inventory; in July, shut down one day for vacation; in August, boys employed as second-class handle finishers struck on account of dissatisfaction over wages; in November, shut down on account of accident.

Natick. In April, lasters employed by Brennan Boot & Shoe Co. struck for an increase; later, returned to work on old scale. *June.* W. M. Bruce & Son, boxes, combined with the Williams Box & Lumber Co. of Biddeford, Maine, under the title of Biddeford & Natick Manufacturing Co., to manufacture boxes, shooks, and washboards; later, dissolved and W. M. Bruce re-established manufacture. *October.* John F. Felch, pioneer shoe manufacturer of Natick, died, aged 60; later, his brother, Chas. B. Felch, died, aged 54 years.

Needham. In January, William Carter & Co., knit goods, completed addition to factory. *December.* John F. Brooks & Co. began erection of addition to finishing department and installed new boiler.

NEW BEDFORD. In January, Potomska Mills added new cards. — Acushnet Mills began extension of East wing; in April, weavers struck owing to dissatisfaction with new wage scale; adjusted; began construction of new weave shed; in May, loom fixers struck over dissatisfaction with overseer; adjusted; in June, weavers in No. 1 mill struck as a protest against the discharge of an overseer; later, returned to work; in December, increased wages. *February.* Whitman Mills paid its first dividend since 1897. — City Manufacturing Co. fined \$200 for violation of 58-hour law on four counts. — Cornell Stocking Co. in operation. *March.* Employés of W. S. Hill Electric Co. struck against a reduction; adjusted. — Bennett Spinning Co. began erection of new weave shed; in April, added new boiler. — J. C. Rhodes & Co., eyelets, ran nights; later, destroyed by fire; rebuilt. — Wamsutta Mills No. 6 carding room damaged by fire; in April, produced samples of sail cloth to take the place of duck formerly used on light sailing vessels. — New Bedford Spinning Co. added new machinery. — Edward S. Taber, president Morse Twist Drill & Machine Co., died. *April.* Wages advanced in the cotton mills; also in December. — Holden, Leonard, & Co., woollen goods, of Bennington, Vt., leased Onoko Mills. — Hathaway Mills began construction of new weave shed; in July, dressing room damaged by fire. — John W. Macomber, manager New Bedford Cordage Co., died, aged 68 years. *June.* Dartmouth Mills began erection of new addition, 100 x 70 feet, 3 stories; in October, added new machinery. — Henry H. Fisher, baker, sold to Chas. S. Cahoon. — Brownell, Ashley, & Co., carriages, dissolved; no successor. *September.* Pierce Manufacturing Co. began construction of new mill, 110 x 300 feet, 3 stories; in November, ran nights. — Brown & Co., nails, sold to Atlas Tack Co.; plant removed to Taunton. — Beacon Manufacturing Co. started up after a 3 months' shutdown. *October.* Lambeth Rope Co. added new machinery and completed addition to plant. *November.* Rotch Mill of New England Cotton Yarn Co. added new combers. *December.* Morse Twist Drill & Machine Co. ceased night work. — New Bedford Copper Co. damaged by fire. — During the year, the New England Cotton Yarn Co. absorbed the following plants: New Bedford Spinning Co., Howland Mills Corporation, Bennett Spinning Co., and Rotch Spinning Corporation.

Newbury. In January, fires damaged card and picker rooms of Byfield Woollen Co.; in February, mill shut down on account of low water; in March, ran nights; in April, shut down owing to accident to machinery. *May.* Larkin & Morrill and Pearson Tobacco Co. consolidated under name of Byfield Snuff Co. *June.* J. O. Rogers, shoes, shut down indefinitely.

NEWBURYPORT. In January, New England Fire Proofing Co. organized from old Newburyport Brick Co. and Dearborn Bros. of Lynn; works dismantled and new ones begun; in April, new buildings completed; in May, started up. — Nathan C. Moody, ship blacksmith, retired. — Barton & Thurlow, shoes, dissolved; Barton Shoe Co. succeeded. — Lasters employed by J. W. Walker & Co., shoes, struck for increase; adjusted. *February.* Towle Manufacturing Co., silversmiths, made repairs and added improvements; in July, shut down temporarily. — Frank E. Taft, late of E. P. Dodge Manufacturing Co., shoes, died at Boston. *March.* W. H. Noyes & Bro. began on addition to comb factory; in December, incorporated as W. H. Noyes & Brothers Co.; authorized capital, \$30,000. — Edward Perkins Lumber Co. began addition to box factory, 40 x 59 feet, 2 stories; in December, added new boiler. — Dodge Bros., shoes, ran nights. — H. H. Tingley, leather dressing, increased capacity; in August, factory destroyed by fire. *April.* Brackett Manufacturing Co. sold its heel machinery to Trask & Gorwaiz. *May.* Newburyport Shoe Co. started on summer time schedule; several workmen struck and demands granted; in July, others struck for increase; not granted. — Seth A. Borden, treasurer Hargraves and Parker Mills of Fall River, purchased Peabody Mills, and organized new corporation, with authorized capital of \$60,000; in June, purchased the Victoria Mills also; in July, Peabody Mills ran on full time; in September, increased capital stock to \$90,000; in October, Victoria Mill started up; fire occurred in picker room of No. 2 Peabody Mill; in December, increased wages. — C. E. Coffin & Co., hats, shut down for inspection of boiler; machinery for fur hats removed from factory; in September, Merrimac Hat Co. of Amesbury leased plant, renamed it "The Bayley" and started up; in December, increased force. — Bay State Bottling Co. increased facilities. *June.* Factory building formerly occupied by Brackett Manufacturing Co. refitted, equipped, and occu-

pled by N. D. Dodge & Bliss Co., shoes. *October.* Fiberloid Co. equipped plant with electric lights. *November.* Burley, Stevens, & Co., shoes, dissolved; Burley & Stevens continued. — Edward F. Tibbetts, retired shoe manufacturer, died, aged 61 years. *December.* John B. Frost retired from Newburyport Shoe Co.

NEWTON. In January, Billings, Clapp, & Co., chemicals, moved to Tiverton, R. I., that town having voted to exempt plant from taxation for 10 years. *April.* H. H. Hunt's lumber mill damaged by fire. *June.* Saco-Pettee Machine Co. began addition, 310 x 60 feet, 3 stories. *December.* Edwin A. Smallwood, retired furniture manufacturer, died, aged 71 years.

Norfolk. In January, City Mills Co. sold to American Felt Co. of New York.

NORTH ADAMS. In January, fire damaged offices of James Hunter Machine Co. — Deerfield Valley Ice Co. organized. *February.* Windsor Co. shipped print goods to Cuba; in September, ran nights and began work on new bleach house, 38 x 70 feet, 2 stories; in December, increased wages. — Blackinton Co. started up preparatory departments; in March, ran nights and added new looms; in May, added 20 looms; in June, sank artesian well to supply dyehouse and boilers; in July, added new machinery and ran nights; females in sewing room struck owing to dissatisfaction with wages; later, returned to work at old rates; in August, increased wages of weavers; in October, ran nights; in December, added machinery. — F. J. Barber's leather goods factory, built in 1898, sold to E. S. Wilkinson. — Johnson Manufacturing Co. added new class of product, namely, cotton worsteds for men's wear, and new looms; in June, plant damaged by fire; in September, ran nights and added new looms; in November, waste house destroyed by fire; in December, increased wages. *March.* Arnold Print Works changed location of boilers and made addition to electric-lighting plant; in April, ran portion of plant on summer schedule; in June, shut down for stock taking and began clearing land for an extension of plant; in July, folders struck owing to dissatisfaction with pay; compromised; in September, singeing room damaged by fire; began construction of new warehouse, 125 x 93 feet, 5 stories; in December, constructed new filter to render river water of use. *April.* Berkshire Cycle Co. added an acetylene gas plant; invention of E. L. Rand. — Chas. Ryan, bottles, moved to larger quarters. — North Adams Shoe Co. reduced employes and wages. — H. W. Clark & Co., wholesale grocers, leased Cady shoe factory for purpose of establishing cracker bakery; in September, began operations. — Mule room of Greylock Mills ran nights; in December, increased wages. — Foundry formerly operated by Hodge & Ladam sold to W. F. Corkhum.

May. Eagle Mills started up after a year's shutdown; in July, in full operation running 293 looms on print cloth; in December, increased wages; picker room damaged by fire. — Canedy-Clark Shoe Co. purchased idle machinery at Cady's shoe factory and removed it to their plant; in June, increased wages of lasters. — Pullers-over employed at N. L. Millard & Co.'s shoe factory struck over disagreement on work and wages; demands granted; in July, lasters struck owing to misunderstanding; later, returned to work; in November, lasting room shut down for 3 days. — S. A. Dibble & Co., lumber, reorganized as a corporation. *June.* Carpenters employed by Arthur Robinson struck for back pay alleged to be due; men paid and such as were needed returned to work. — Dunbar Mills ran some of its looms nights; in December, increased wages. — Stock of leather in factory of C. T. Sampson Shoe Co. damaged by bursting of street water main. — North Adams Manufacturing Co. ran nights and shut down for repairs; in August, began erection of new mill, 80 x 55 feet, 4 stories; in December, completed. *August.* Beaver Mills ran nights and made change in payment of night force; in December, increased wages; completed new addition. — Eclipse Mill ran nights and made change in payment of night force; boys in spinning and carding rooms struck for increase for night work; in December, increased wages. *October.* W. C. Ellis purchased factory originally built for F. J. Barber and in November dedicated new factory with a dance; in December, moved from old factory and began operations. — North Adams Brush Works sold to F. S. Richardson by its owner, A. F. Phillips, who re-established manufacture of brushes in Clarksburg. *December.* Wilkinson & Bliss, shoes, shut down for repairs and stock taking. — James Hunter Machine Co. purchased land for erection of new foundry, also, increased wages.

NORTHAMPTON. In February, Williams Manufacturing Co. added veneer drums to its product; also added new machinery. *May.* Machinery of the McCallum Hosiery Co. moved from the Belding mill into new mill just completed; in July, new English

machinery installed. *June.* Old button-shop property sold to Thaddeus Graves of Hatfield. — Wire mill owned by Horace Lamb estate and recently leased by Chas. N. Johnson of Providence, damaged by fire. *September.* Clement Manufacturing Co. increased wages of polishers and forgers.

North Andover. In January, Sutton Mills began on 4-story addition; in February, started up a portion of looms. *February.* North Andover Mills started on full time. — A scarcity of coal caused temporary shutdowns among the mills. *April.* Lawrence Dye Works leased Massachusetts Bleach & Dye Works to be operated in connection with the Lawrence establishment. *June.* Weavers employed by M. T. Stevens & Sons struck for an increase; compromised, and work resumed; in July, ran several departments nights. — M. F. Campbell & Co., toweling, damaged by fire. *July.* Brightwood Manufacturing Co. purchased land and buildings adjoining its plant; in August, ran weaving and finishing departments 3 nights a week.

North Attleborough. In January, Snap & Tool Co. ran nights. *February.* Young, Bagnall, & Co., jewelers, dissolved; Doran, Bagnall, & Co. continued. — H. A. Wilmarth and W. H. Hall engaged in manufacture of jewelry. — Gold Medal Braid Co. added new water wheel. — W. H. Bell & Co., jewelry, shut down. *March.* Mason Box Co. added 2 new printing presses to plant; in September, completed foundation for addition and ran overtime; in October, equipped plant with electric lights; in December, shut down for stock taking. — Attleborough Manufacturing Co. added new packing room. *May.* Maintien Bros. & Elliot increased facilities. *July.* F. M. Whiting & Co. ran on 4-day time. *September.* G. K. Webster ran overtime; in October, ran nights. — Henry H. Curtis Co. incorporated under Rhode Island laws; authorized capital, \$75,000. *October.* Salomon Davidson, jewelry, succeeded by Fontneau & Cook. — Royal Novelty Co. formed to manufacture aluminum goods. *November.* Addition to jewelry factory of J. F. Sturdy & Sons begun. *December.* New factory of F. I. Gorton completed. — Dunbar, Leach, & Garner began manufacture of jewelry. — Elton I. Franklin of E. I. Franklin & Co., jewelry, died, aged 52 years.

Northborough. In January, Myles Wood, retired textile manufacturer, died, aged 92 years. *May.* Walter M. Farwell & Co., combs, destroyed by fire; to be rebuilt. *July.* Woodside Mills shut down indefinitely; in August, started up in part. *August.* Northborough Woollen Mills began running on full time.

Northbridge. In January, foundry of Whitin Machine Works started on full time; schedule for past two years had been from 4 to 5 days a week; in March, increased force. *April.* Wages increased at Whitinsville Cotton Mills, Linwood Mills, and Paul Whitin Manufacturing Co.; wages also increased in December. — Whitinsville Cotton Mill damaged by fire. *May.* Storehouse of Riverdale Woollen Co. destroyed by fire.

North Brookfield. In January, E. & A. H. Batcheller Co., shoes, made a reduction of wages in brogan-treering department; cutters on heavy goods worked on 8-hour time and those on fine goods on 10-hour time; in February, cutters laid off 2 days to allow balance of factory to catch up; in March, cutters put on 10-hour time; in June, cutting department shut down 5 days for stock taking; other departments followed in order; machinery kept running; in July, bal-trimmers struck over difference in wages; returned to work at old rates; rand cleaners notified of a reduction of 2 cents per 24-pair case, with a change in work; in August, slight reductions in wages, affecting a few hands, made; in November, shut down for several days; in December, added new machinery and shut down for stock taking. *December.* H. H. Brown & Co., shoes, ran nights.

Norton. In January, Morse Wool Treating Co. made repairs to fire-damaged buildings and installed electric plant for lighting its works and those of the Norton Mills Co. *June.* Old mill at the copper works destroyed by fire; mill had not been in operation for several years.

Norwood. In July, employes in gilding department of E. Fleming & Co., bookbinders, struck on account of employment of more than three apprentices; settled by discharge of additional apprentice. *August.* Sewers at Norwood Press bindery struck on account of reduction in wages. *December.* L. W. Bigelow's Sons, shoes, sold to C. H. Carter. — Press feeders at Berwick & Smith's struck for increase; granted. — Chandler & Gay, oil-cloth, destroyed by fire.

Orange. In January, Orange Box & Lumber Co. started up as a division of the combination formed by the Baldwinville (Mass.) and Winchester (N. H.) box companies. *March.* Ground broken for new factory, 60 x 200 feet, for Grout Bros., manufacturers of motor carriages. *April.* New Home Sewing Machine Co. began preliminary manufacture of machine needles; in December, shut down for stock taking. *June.* Main pattern house of Rodney Hunt Machine Co. damaged by fire; in July, company increased force; in September, ran nights. *September.* Mann & Sprague, garments, ran nights.

Oxford. In January, A. L. Joslin & Co., shoes, increased force; later, ran nights; in April, overtime work ceased. *October.* Chase Woollen Mill purchased by Caughlin & Son of Rochdale, owners of Glen Woollen Mill at Fitchburg, to manufacture yarn. *December.* Thayer Woollen Co. added new cards and spinning frames.

Palmer. In February, Palmer Carpet Manufacturing Co. shut down dyehouse owing to illness of boss dyer; in August, fire damaged cotton house; in September, wages of weavers increased. — The female operatives at the hat factory stopped work, demanding their pay which they claimed was in arrears; later, 30 per cent of amount due was paid and factory reopened under control of O. J. Powers & Son who had leased the plant; in April, shut down on account of dull trade. *March.* Holden & Fuller ran nights. *July.* Wright & Colton Wire Cloth Co. ran nights; in September, shut down owing to shortage of materials. — Boston Duck Co. added 2 stories to a portion of its plant; in August, began erection of storehouse; in November, added new water wheel; in December, added new boiler and increased wages. *August.* Palmer Mill of Otis Co. damaged by fire; in December, wages increased. *December.* Monson Granite Co. built an addition to its works.

Peabody. In January, Downing & Knapp, morocco, succeeded by Downing, Perkins, & Co., and in February moved to Danvers. — Chas. E. Perkins began manufacture of soles, etc. — *February.* Geo. W. Bancroft, manufacturer of curriers' grease, died, aged 58 years. *March.* Clark Glove Co. began manufacture of leather sporting gloves. — P. Lennox & Co. started up morocco factory; in May, glaziers struck for increase; portion of plant ran nights; in July, shaving-machine operators struck for increase; compromised; later, firm leased the Moulton factory at Lynn. *April.* John Boyle Machine Co. incorporated; authorized capital, \$5,000. — Jos. H. Poor withdrew from Vaughn Machine Co. — N. S. Leonard & Co. organized to manufacture leather. — Benjamin Jacobs, leather manufacturer, died, aged 59 years. *May.* Michael Kelly moved here from Salem. — Enos Co., windlasses, ran nights. *June.* Vaughn Machine Co. added new departments to plant and increased force. — Poor & Littlefield, morocco, moved to larger quarters and later, dissolved, business being continued by N. H. Poor Leather Co.; in November, latter firm succeeded by N. H. Poor Leather Co. Incorporated. — Fire damaged hair owned by Tanners Glue Co. stored in the Webster factory building. *July.* Pastors employed at J. S. Crehore & Co.'s shoe factory struck for more pay; discharged and places filled. — A. B. Clark shut down 2 days owing to accident to machinery; machine hands struck for increase; in August, nailers struck for increase; granted. *August.* S. S. Littlefield, formerly of Poor & Littlefield, leased the Nelson shop and fitted it up for manufacture of morocco. — An addition begun to Parmenter & Polsey Fertilizer Co.'s mill. *September.* Hand stakers at Edward Eagan & Sons' factory struck over wetting down of skins. *October.* Proctor leather plant and all adjoining property of the Proctor estate sold to Winchester (N. H.) Tanning Co., a branch of the A. C. Lawrence Leather Co. of this town. — F. P. Osborn, Geo. C. Prescott, and Jos. H. Poor formed partnership to manufacture shoe stock. *November.* Helios Electric Co. of Philadelphia and Standard Thermometer Co. consolidated under name of Helios-Upton Co. with factories in both places. — T. H. O'Shea leased currying shop adjoining his morocco factory. *December.* Armstrong Leather Co. added new boiler.

Pepperell. In January, Gregory, Shaw, & Co. added new lasting machines. *February.* Shoe machinery of John M. Sliney sold at auction. *March.* Flagg Manufacturing Co. began addition to harp factory; in June, shut down temporarily. *October.* Champion Card & Paper Co. and Pepperell Card & Paper Co. ran nights. — Nashua River Paper Co. completed repairs.

PITTSFIELD. In January, Smith Shirt Co. increased wages and capacity. — Business of Smith-Hadley Shirt Co. sold to Manhattan Shirt Co. of New York, who continued local plant; in April, increased force; in December, shut down for repairs. — Stanley Electric Manufacturing Co. shut down one week for repairs and stock taking; in

March, increased capacity; in May, began foundation for new boring machine and lathe; in June, employed 2 sets of hands running 23 hours per day; in December, shut down for stock taking. — W. E. Tillotson began running 4 nights a week; in February, continued night work and purchased 15 of the idle looms at the Bel Air Mills, and began on addition; in March, completed addition and ran nights; in April, ran nights; in June, ran weaving department nights; in July and August, ran nights; in October, increased wages of sewers, and ran 4 nights a week; in November, ran weaving room nights; in December, added new dryer; carders and weavers struck against working overtime. — Pontoosuc Woollen Manufacturing Co. shut down on account of dull trade; in February, dyehouse started on full time and later entire mill started up; in March, carding, spinning, and weaving departments shut down; later, started on full time; later, all departments, except dyehouse, finishing, and designing rooms, shut down temporarily; in June, replaced old looms with new; in July, shut down to install new flume under dyehouse; drying room damaged by fire; water wheel discarded in machine shop and electric motor substituted; in August, ran nights; in September, picker room damaged by fire; electric equipment increased; in October, started idle looms in Taconic Mill and increased wages; in November, purchased several looms from the Pomeroy Mills and set them up in weaving department; also started dressing department of Taconic Mill; in December, ran nights and added new looms. — A. H. Rice & Co., silk goods, ran nights; in February, stopped night work; in April, began running on short time; in July, shut down for stock taking.

February. J. L. & T. D. Peck Manufacturing Co. shut down upper mill temporarily; later, resumed on 4-days time and subsequently shut down all but dyehouse; girls employed in twisting room of lower mill struck to resist a cutdown; compromised; in March, added new jack spooler and section beamer to lower mill and 20 looms to upper; weave room shut down for 3 days; old fulling mills replaced by new; in April, upper mill wired for electric lights, and lower mill shut down for repairs; in May, upper mill shut down for stock taking; in July, shut down for one week's vacation; in September, added new looms; in October, began erection of new dyehouse and added new boiler; in November, card room in upper mill damaged by fire. — S. N. & C. Russell Manufacturing Co. shut down finishing room and dyehouse for 3 days; in April, shut down weave room owing to scarcity of warp; in July, shut down weaving department to install new looms and began work on addition to plant; in August, added new cards, and ran carding and spinning departments nights; in October, increased wages; in December, completed addition to plant. — Helliwell & Co. started portion of plant with machinery brought from England; in March, started 25 looms; in April, put additional looms in operation and increased force; in May, had portion of work done at Peck's Mills; in July, ran carding and spinning departments nights; weavers and spinners struck owing to dissatisfaction with pay; later, returned to work; in December, ran carding and spinning departments nights. — D. M. Collins & Co., knit goods, returned to 5-day time; in April, shut down for repairs, and later, ran 5 days per week; in July, shut down on account of dull trade; in November, increased force; in December, shut down several days owing to scarcity of yarn. — Edwin Saunders, died, aged 84 years; he established the works from which the present silk mills of A. H. Rice & Co. were developed. — Solomon N. Russell of the S. N. & C. Russell Manufacturing Co., died, aged 77 years.

March. Work began on the new Hubbell Foundry. — Cheshire Shoe Manufacturing Co. ran on full time on orders only. — Gimlich & White, brewers, added 6 tanks holding 5,400 gallons. — O. W. Robbins Shoe Co. ran on full time; in April, began on summer-time schedule; in October, shut down for stock taking; in November, resumed operations. — Pittsfield Manufacturing Co. started on part time; later, shut down, resuming in October. *April.* Sisson & Robinson, boxes, increased capacity. — Chas. E. Merrill, woodworker, shut down for repairs. — Berkshire Typewriter Paper Co. increased capacity; in July, moved to larger quarters. *May.* E. D. Jones & Sons Co. increased force in draughting department; in June, pattern room damaged by fire; ran machine shop nights; in December, equipped plant with electric lights. — Geo. D. Parker's saw-mill equipped with electric lights. — Chas. H. Daniel's cider mill destroyed by fire. — Musgrove Knitting Co. incorporated to manufacture underwear; authorized capital, \$12,000; started up; in September, finished samples and began on orders. *June.* A. D. Gale, harnesses, retired; no successor. — Stevenson Co. shut down for balance of year. *July.* Pittsfield Heel Stock Co. started manufacturing; added new machinery and increased force. *September.* Arthur W. Eaton and others purchased from the American Writing Paper Co. the discarded plant of the Hurlbut Stationery Co. and formed new company as Eaton-Hurlbut Stationery Co. *October.* E. C. Brimmer, shirts, added new machinery. — Pittsfield Cotton Wear Manufacturing Co. formed. *November.* Hamilton Mining & Milling Co. incorporated under Delaware laws; authorized capital, \$100,000.

Plymouth. In January, creditors of Plymouth Woollen Mill agreed to continue business of the company and form a new corporation; in June, absorbed by American Woollen Co. *March.* Plymouth Cordage Co. began addition to factory.

Princeton. In April, the M. & H. Manufacturing Co. moved to larger quarters. *August.* J. H. Temple's chair factory destroyed by fire.

QUINCY. In February, strike inaugurated by the granite cutters. After two weeks it was declared off March 12; the minimum price per hour was fixed at 23 cents, a gain of nearly two cents for the cutters; it was also agreed to pay weekly; in April, cutters struck over question of pay day; settled satisfactorily. *April.* Old Colony Boot & Shoe Co. ran nights. *May.* Carriage factory of Simeon Scannell destroyed by fire.

Randolph. In February, several edgetrimmers and edgesetters employed at the shoe factory of Bradley, Hagney, & Leonard, struck by order of the Brockton Boot & Shoe Workers Union; later, partial settlement made with firm and work resumed. *November.* Haggerty & Sullivan, shoes, began work on foundation for new factory, 125 x 31 feet, 4 stories. — Tileston Bros. Shoe Co. increased capital stock, \$10,000.

Raynham. In May, Jackson's sawmill, occupied by Everett Horton, destroyed by fire.

Reading. In July, Oliver Whiteman Shoe Co. organized to manufacture shoes; leased plant and began operations. *October.* Richardson Shoe Co. incorporated under Maine laws; authorized capital, \$75,000.

Richmond. In March, Richmond Iron Works received sufficient orders to warrant work being carried on for several months.

Rockland. In February, lasters employed at French, Shriner, & Urner's shoe factory granted an advance in wages on all grades of work, amounting to nearly 25 cents per day for each workman. — The several shoe factories were compelled to shut down owing to the severe snow storm. *November.* E. T. Wright & Co., shoes, shut down owing to accident to machinery.

Rockport. In April, stone cutters employed by Rockport Granite Co. struck by order of the National Stone Cutters Association, on account of labor troubles in New York; later, quarrymen struck. *May.* Nathaniel Webster and his employés were perpetually enjoined by the Suffolk Superior Court from cutting ice on Cape Pond. *September.* Edw. Canney, purchased works and quarries of Lanesville Granite Co.

Rowley. In June, sawmill owned by N. N. Dummer destroyed by fire. *July.* New machinery added to shoe factory of Wm. C. Foster's Sons.

Royalston. In February, Geo. Whitney Woollen Co. started up after a shutdown of several weeks.

Russell. In March, the works of the Blandford Brick & Tile Co. started up. *September.* Weronoco Paper Co. began an addition to main building, 81 x 40 feet, for a stock house; in December, shut down on account of low water.

Rutland. In June, Moulton Bros. satinette mills destroyed by fire; to be rebuilt. *December.* After several months idleness, Lakeville Woollen Co. resumed operations.

SALEM. In January, Treadwell Bros. & Clark sold to Kelton-Bruce Manufacturing Co. who began operations in December. — Burke & Bamford Shoe Co. moved to Ipswich. *February.* Geo. L. Newcomb, shoe tools, died, aged 87 years. — Fire damaged lumber drying room of N. P. Gifford. *March.* Patrick J. Creedon & Co. began addition to factory; in May, completed and occupied; in July, shut down partially, 3 weeks. — M. Robson Leather Co. absorbed by American Hide & Leather Co. *April.* Naumkeag Steam Cotton Mills increased wages; in December, increased wages. *May.* White Bros. began manufacture of heels. — Michael Kelly, morocco, moved to Peabody. — O'Rourke Bros., cut granite, ran nights. *June.* D. D. Lefavor & Co.'s shoe factory damaged by fire; repaired and capacity increased; in September, moved to new factory. — John

Rood & Co., shaving machines, retired from business; no successor. — Plant of West India Fibre Co. damaged by fire; rebuilt and operated in September. *August*. Whiteners at the Robson tannery struck for increase; places filled. *September*. Parker Bros. moved into new addition. — Finishers at C. R. Brainard & Co.'s morocco factory struck on account of objectionable workman. — Cutters at J. Brown & Sons shoe factory struck owing to dissatisfaction over pay; in October, returned to work; in November, new price list agreed on and posted. *October*. Cartier & Pelletier leased plant and in November began manufacture of patent fish hooks. — W. P. & E. F. Harmon, leather, shut down for balance of year. — Meyer Page of Warren Page, & Co., molded counters, died, aged 48 years. — Sterry Smith, who in 1845 established the first iron foundry in Salem, died, aged 78 years. *November*. Riley leather factory sold at auction and leased by Keith-Carr Leather Co. — Thomas E. Green started manufacture of calfskins in the Lambert tannery. — Arthur W. Copp, wood and paper boxes, consolidated with J. P. Friend & Co. of Beverly, under title of Friend & Copp Co. and moved to the latter town. — John G. Page of F. M. Page & Co., findings, died. *December*. Cass & Daley, shoes, moved to larger quarters. — P. A. Field & Co., shoes, increased wages.

Sandwich. In April, Isaac N. Keith, proprietor Keith Manufacturing Co., builders of railroad cars, died, aged 60 years.

Saugus. In November, Snowdrift Footwear Co. purchased factory, and remodeled same to manufacture rubber shoes. *December*. R. Y. Russell & Son Co., folding boxes, moved to Lynn.

Savoy. In February, Barber's steam sawmill ran on full time.

Sharon. In April, H. A. Lothrop Manufacturing Co. succeeded by H. A. Lothrop & Co. *June*. Geo. R. & W. R. Mann, cotton goods, closed mill, removed all machinery, and advertised building for rent.

Shelburne. In February, Lamson & Goodnow Manufacturing Co., cutlery, ran on 4-day time. — H. H. Mayhew Co. ran nights. *April*. Foundation begun for the steam hammer at the new steel casket factory.

Shirley. In February, F. D. Weeks Extracting Co.'s shoddy mill destroyed by fire; in April, work of rebuilding begun; in July, mill completed and occupied. *April*. Phoenix Mills shut down partially, owing to accident to dam. *September*. C. A. Edgarton Manufacturing Co. increased capacity. *October*. Gould Manufacturing Co. purchased "Slab City" mill privilege and began repairs and erection of new mill on site of the old sawmill owned by Samuel Hazen nearly 100 years ago. *November*. Samson Cordage Works began clearing away ruins of old Fredonia Mill, burned 3 years ago, preparatory to erecting a new building, 40 x 40 feet, to be used as a power house.

Somerset. In March, Somerset Stove Foundry Co. resumed operations. *April*. Mt. Hope Iron Co. shut down two weeks for repairs. *July*. Somerset Lumber Co. started up after being idle for some time on account of low water. — Somerset Stove Foundry Co. shut down for two weeks. *September*. Mt. Hope Iron Co. resumed work after recent shutdown. *December*. Somerset Manufacturing Co. incorporated to manufacture metallic globules for polishing, etc.; authorized capital, \$50,000.

SOMERVILLE. In February, factory of Standard Vinegar Co. damaged by fire. *July*. Firemen employed by North Packing & Provision Co. given 8-hour day and an advance of \$2 per week. *November*. Hawkes Manufacturing Co. dissolved; H. F. Hawkes moved to Boston and continued. *December*. Samuel Walker of Walker Oil Works, died, aged 81 years.

Southampton. In February, sawmill of E. K. Parsons shut down owing to low water. *October*. Alfred Russell sold his whip shop to Westfield parties.

Southbridge. In March, John M. Clemence, retired box manufacturer, died, aged 79 years. — Hamilton Woollen Co. and Central Mills Co. began on summer time schedule. *April*. Building formerly occupied by Richards Manufacturing Co. sold at auction to a new corporation for the manufacture of knives; incorporated with authorized capital of \$6,000, and started up with many of the old employés. — Hamilton Woollen Co. added

new spinning frames. *May.* Work begun on construction of new buildings for American Optical Co., one 240 x 35 feet, 2 stories, the other a storehouse, 60 x 27 feet. *July.* Work begun on erection of addition to Southbridge Printing Co., 60 x 30 feet, three stories. — Worcester Optical Co. purchased machinery and stock of defunct Richards Manufacturing Co. and moved it to Worcester. *August.* Southbridge Printing Co. shut down for repairs. — Chester A. Dresser died; in 1858 he purchased the Central Manufacturing Co.'s mills with which he had since been connected. *November.* Theodore Harrington, manufacturer of knives, died, aged 79 years.

South Hadley. In June, stockholders of Glasgow Mills decided to pay all outstanding debts by mortgaging the property. Mill had been closed since September, 1896; later, plans made to resume work. — Carew Manufacturing Co. began work on new addition; in November and December, added new boilers. *July.* Lynch Bros. shut down their brick yard for the season. *August.* Hampshire Paper Co. started up after a shutdown of 4 weeks.

Spencer. In January, Beebe, Webber, & Co. of Holyoke decided to continue operations in branch mill in this town; plant run to full capacity; in April, weave room ran nights. — E. E. Stone & Co. assumed control of manufacturing the Myles E. Dunbar bicycle crate; in July, boxmakers struck; in October, added new machinery. *March.* Spencer Wire Co. increased wages. — E. Jones & Co., shoes, ran on 10-hour time. — Brookfield Counter Co. moved here from Brookfield. *April.* Spencer Bottling Co. removed to Worcester. — Stock and machinery of Prouty Bros., shoes, sold at auction. — Chas. E. Kent, boot manufacturer, died, aged 63 years. *July.* J. E. Fenner, started manufacturing under name of Warp Knitting Co.; later, incorporated under Maine laws; authorized capital, \$5,000; in November, shut down; in December, attached by N. E. Cotton Yarn Co. *September.* Ne Plus Ultra Yeast Co. installed tanks preparatory to manufacturing. *October.* Fire damaged heel factory of W. A. Barr & Son. — Heel cutters at Isaac Prouty & Co.'s struck; in November, demands granted and work resumed.

SPRINGFIELD. In January, Old Corner Wall Paper Co. bought mantel and tile works of P. H. Potter. *February.* Strike occurred among employés at gas house for more pay or shorter hours. — Machinery of Warwick Cycle Manufacturing Co. sold to A. B. Pitkin Machine Co. of Providence; in November, plant sold to D. B. Wesson. — Davis Electrical Co. shut down on account of business troubles; in May, re-incorporated under Maine laws. *April.* Springfield Foundry Co. increased wages. — Pearl cutters at Newell Bros. Manufacturing Co. struck for increase. — Pickling vat at Barney & Berry's skate works destroyed by fire. — United States Armory discontinued manufacture of new army rifle sights; in June, shut down owing to accident to machinery and for stock taking. — Indian Orchard Co. added new machinery; in July, began excavating for new flume, wheel pit, and tail race; in October, dye department damaged by fire; later, completed addition to dyehouse. — Springfield Rendering Co. laid foundation for new abattoir. — J. E. Landen, jewelry, moved to larger quarters. — Smith & Wesson installed smoke consuming device; in July, shut down 2 weeks for stock taking. — O. W. Bullock & Co., jewelers' tools, increased capacity. — Springfield Breweries Co. formed and absorbed the Springfield and Highland breweries in this city, the Consumers of Chicopee, and the Hampden of Holyoke. *May.* Employés of the Springfield Breweries Co. struck for a new wage contract; partly compromised and work resumed; in June, brewers struck for the 9 hour day during the 4 winter months; the syndicate held out for the short day for 2 months; later, the bottlers and drivers joined the brewers and the Company granted demands, the employés agreeing to give up their demand for 9 hours on Saturdays for 2 other months of the year. — C. J. Brosnan & W. J. Dunn leased quarters to manufacture envelopes and papeteries. *June.* Industrial Cycle Manufacturing Co. and Springfield Lumber Co. damaged by fire. *July.* Springfield Brick Co. purchased plants of Coomes Brick Co. of Chicopee and Agawam and Wellington Brick Cos. of Springfield; in November, purchased Hennessey brick yard at Longmeadow. — Woodman & Canavan began manufacture of cigar boxes. — Molders and helpers employed by Bausch & Harris Machine Tool Co. paid off and notified that there would be no more work; the men had made a number of demands which the company refused to grant; in August, Molders Union declared a boycott on company; in September, company secured injunction restraining Molders Union from posting sentinels in front of company's buildings or in any way interfering with its business, its employés, or those seeking employment. — Burtworth Carpet Co. moved to Chicopee. — United States Envelope Co. began consolidation of plants, combining Springfield branch with that

of Holyoke, moving machinery to that city, and closing local factory. — L. I. Fitts retired from business; no successor. *September.* Boston Artificial Leather Co. incorporated under New Jersey laws; authorized capital, \$100,000. — Bullard Camera Co. incorporated under Massachusetts laws; authorized capital, \$100,000. — Planet Manufacturing Co. increased capital stock \$10,000, and purchased business of Iroquois Bag & Oil Co. — J. H. Williams Wall Paper Co. incorporated; authorized capital, \$5,000. — Alaska Knitting Co. started to work off stock on hand. *October.* Composition pressmen at Dickinson Hard Rubber Co.'s struck over disagreement about wages and union matters; places filled. — Victor Sporting Goods Co., Young & Hosley, and Springfield Facing Co. damaged by fire. *November.* F. W. Potter erected new building, 30 x 20 feet, 2 stories, for use of Potter Photographic Co. making a specialty of photo-jewelry. — Boston Insole Co. began manufacture. — Cheney-Bigelow Wire Works purchased from D. B. Wesson the idle Warwick Cycle plant. — Natick Underwear Co. added new machinery. — Boynton Manufacturing Co. discontinued manufacturing rubber stamps, and F. C. Boynton took W. E. Kendall into partnership and began manufacture of typewriter keys, door plates, etc. *December.* Metallic Drawing Roll Co. ran nights. — Elektron Manufacturing Co. ran nights. — Parsons & Green Manufacturing Co. began closing out its papeterie business. — L. S. Wilder sold business and patents of Wilder Manufacturing Co. to R. H. B. Warburton who continued under old name. — John M. Tarbox, retired manufacturer and inventor, died, aged 71 years.

Stockbridge. In January, Miles E. Dunbar sold the right to manufacture his folding bicycle crate to E. E. Stone & Co. of Spencer. *April.* Chas. E. Callender, paper, ran overtime.

Stoneham. In September, Wm. Tidd & Co. sold to American Hide & Leather Co.; in December, plant shut down permanently. — Fire damaged cutting room of P. Cogan & Son's shoe factory; temporary shutdown caused. *October.* F. B. Jenkins & Co., shoes, dissolved, new firm continued under same name. *December.* Morocco factory of T. J. Quinn damaged by fire. — W. P. Fletcher's box factory damaged by fire. — Fire damaged cement room of Thos. H. Jones' shoe factory.

Stoughton. In January, T. A. Norris of Brockton purchased the shoe machinery in the old Tenney factory and moved it to Boston. *June.* Tack factory of Lamont Pratt partially destroyed by fire. *August.* Fire damaged Chapman's bicycle factory.

Sturbridge. In October, Fiskdale Mills made repairs; mule room of No. 2 mill shut down on account of low water. *November.* Snell Manufacturing Co. installed new engine.

Sutton. In February, D. T. Dudley & Son Co., shuttles, ran nights. — Fred. S. Smith's shoddy mill shut down for indefinite period. *December.* Manchaug Mills increased wages.

Swausea. In March, D. R. Child & Co. began addition to jewelry factory.

TAUNTON. In January, Atlas Tack Co. shut down for stock taking; in April, ran nights; in May, No. 1 mill shut down owing to differences between employes and management; in October, feeder boys struck; places filled; in December, sold Taunton mills to H. H. Rogers of Fairhaven. — J. C. Sproat's sawmill shut down indefinitely. — Taunton Locomotive Manufacturing Co. ran 3 nights a week; in March, ran nights and increased force; in April, ran nights; in May, increased force; in June, ran nights; in September, equipped plant with electric lights; in October, built addition; in November and December, ran nights. — Weir Stove Co., Taunton Nickel Plating Works, and Taunton Iron Works, started up. *February.* Mills and factories temporarily shut down owing to severe snow storm and scarcity of coal. — Corr Manufacturing Co.'s picker room damaged by fire; in April and December, increased wages and ran nights. — C. W. Coops Piano Co. moved to Boston. *March.* Mason Machine Works started on full time; in September, added new employes; in October and November, ran nights. — Lincoln & Wood Twist Drill Co. ran nights. *April.* Dighton Furnace Co. ran 5 days per week; in May, ran 4 days; in November, ran on full time. *May.* Whittenton Manufacturing Co. increased wages; in October, ran nights and added new boilers; in November, portion of plant shut down for repairs; in December, increased wages. *June.* Phoenix Crucible Works, owned by Henry D. Atwood, sold to American Smelting & Refining Co.; in Septem-

ber, repairs completed. — Buildings of New England Stove Co. damaged by fire. *July*. West Silver Co. started up after a shutdown of a number of weeks. *September*. Eagle Mill purchased by a company known as Cohannet Brewery; incorporated under West Virginia laws; authorized capital, \$100,000; alterations and repairs begun. — Taunton Rivet Co. enlarged plant. — Ground broken for new mill to be operated by Winthrop Cotton Goods Co. incorporated with authorized capital of \$150,000. *October*. Evans' Nickel Works ran nights. — Cohannet Mills absorbed by New England Cotton Yarn Co.; ran portion of plant nights; in November, shut down temporarily for repairs; in December, increased wages. — Vigilant Button Co. ran nights. *November*. L. O. Garrett, manager Atlas Tack Co., died, aged 35 years. — Nemasket Mills absorbed by New England Cotton Yarn Co.; shut down on account of low water. *December*. Elizabeth Poole Mill increased wages. — F. W. R. Emery, bookbinder, died, aged 57 years.

Templeton. In November, Otter River Mills, which had been idle all the year, leased by Geo. Whitney Woollen Co. of South Royalston, for one year.

Tolland. In April, Lyman Clark's steam sawmill destroyed by fire.

Townsend. In January, Webber Specialty Manufacturing Co. incorporated to manufacture washing machines; authorized capital, \$50,000. *April*. Fessenden & Rockwood's stove and lumber mill destroyed by fire; temporary structure built and occupied; later, main mill rebuilt, also blacksmith, paint, and wagon shop. During the year, Spaulding Bros. installed electric light plant in their leather-board factory.

Tyngsborough. During the year, heirs of J. E. Upton, boxes, closed out plant; at close, nothing left except water power and old and useless machinery.

Tyringham. In July, Geo. W. Oles, rakes, sold to Carroll Downs.

Upton. In January, increased force added to workers at the straw factories. *February*. Nelson & Ladow, straw goods, added new machinery; in July, shut down and retired from business; no successor. *July*. Wm. Knowlton & Sons made repairs and added new machinery; in September, increased force; in October, foundation begun for addition to dyehouse; in November and December, increased force. *November*. Machinery of Chapman Bone Cutter plant sold to Worcester Machine Screw Co.

Uxbridge. In January, the Calumet Woollen Co. shut down 10 days on account of dull trade. *May*. Carriage shop of S. C. Newell and blacksmith shop of B. L. Dresser destroyed by fire. *June*. Richard Sayles & Co., woollens, resumed on full-time schedule after a long idleness. *September*. Calumet Woollen Co. shut down for 10 days. — Plant of Chas. C. Capron leased and run by the Norfolk Woollen Co. of Franklin. *October*. Royal C. Taft closed mill for balance of year.

Wakefield. In March, Heywood Bros. & Wakefield Co. shut down for repairs owing to damage caused by lightning.

Wales. In April, Golden Rod and Berkeley woollen mills ran nights; the former built addition for installation of carbonizing plant.

Walpole. In January, main building of Lewis Batting Co. destroyed by fire; rebuilt, 130 x 60 feet.

WALTHAM. In January, Hill, Whitney, & Wood Co., aluminum utensils, increased capacity. — New England Motor Carriage Co. organized; authorized capital, \$1,000,000; in March, began remodeling old Dial factory for its use. *February*. American Waltham Watch Co. suspended night work owing to accident to machinery; in April, began erection of one-story building to be used as a benzine cleansing room; in May, 80 per cent of employes voted for change in running time so that they might have Saturday afternoons during the summer for half holiday; in June, shut down 16 days for vacation; in July, installed new boiler and added another floor to a portion of the plant; in August, repaired electric light plant; in September, increased capital stock \$1,000,000. *March*. Waltham Manufacturing Co., bicycles, began erection of addition to be used as a receiving and shipping department. *April*. Columbia Watch Co. shut down for a few hours; in June, shut down 3 weeks for vacation; in July, began erection of addition. *July*.

American Watch Tool Co. resumed work on old time schedule without the usual Saturday half holiday. — Waltham Clock Co. ran nights and notified employes there would be no vacation this year; in September, increased force. — Boston Manufacturing Co. shut down mule spinning and carding rooms for repairs; in August, discontinued hosiery department; machinery to be replaced with spinning machinery. *November.* J. L. Thompson Manufacturing Co. ran nights.

Watch decision. A final decision was given in the suit of American Waltham Watch Co. vs. United States Watch Co. The suit was brought for an injunction to restrain the defendant from the use of the words, "Waltham, Mass.," on watches of their manufacture. The plaintiff contended that the defendant should not use either one or both words without some accompanying statement which would clearly distinguish its watches from those manufactured by the plaintiff; while the defendant claimed that, as they were geographical names, it had the legal right to use them without distinguishing words. The decree as allowed by the opinion of the full bench of the Supreme Court was as follows:

"This case came on to be further heard at this term, and was argued by counsel; and thereupon, upon consideration thereof, it is ordered, adjudged and decreed that the respondent, its agents, attorneys, and counsellors are hereby enjoined to desist and refrain:

"From using the combined words, 'Waltham watch' or 'Waltham watches,' either by themselves or in combination with other words in connection with, or in describing, advertising or selling watches or parts of watches;

"From using the word 'Waltham' in any advertisement of its watches otherwise than geographically in connection with the word 'Massachusetts' or the abbreviation 'Mass,' in giving its place of business, and are required in all advertisements hereafter issued to take precautions to distinguish the defendant from the plaintiff to the full extent of commercial practicability;

"From using the word 'Waltham,' with or without other words, on the dials of its watches; from making, selling, or disposing of watches, or parts of watches, having plates inscribed with the word 'Waltham' unless accompanied by the word 'Mass.,' and unless there is also prominently collocated with the word 'Waltham' the words 'A new watch company at Waltham, established 1885,' and unless its corporate name, whether in full or abbreviated, is printed on such plates in letters easily legible; from using the word 'Waltham' in any such way as to induce the belief that its watches are made by the plaintiff; and from doing anything to avail itself of the reputation of the plaintiff's watches to increase the sale of its own.

"This injunction shall not apply to inscriptions now on the plates and dials of watches heretofore sold and delivered in the ordinary course of business by the defendant to bona fide purchasers, nor to the plates of watches heretofore finished by the defendant so far as to be fitted, but not sold and delivered, a sworn list of which last named watches, with the numbers thereof, shall be filed with the court within two weeks, and quarterly returns of sales thereof shall be returned to the court under oath."

Ware. In February, J. T. Wood Co., boots and shoes, absorbed the plant of McIntosh & Co., West Brookfield; deal completed in March; new addition, 40 x 40 feet, begun to accommodate machinery; completed in May; removal of machinery from West Brookfield begun; finished in June and West Brookfield factory shut down permanently. *July.* C. A. Stevens & Co. shut down its woollen mill until Sept. 4. *December.* Geo. H. Gilbert Manufacturing Co. completed restoration of rate of wages paid in 1893. — Geo. F. Brown sold his tallow rendering business to Ware Beef Co.

Wareham. In May, Tremont Nail Co. advanced wages; steel plant, which had been shut down for about a year, started up with increased force.

Warren. In January, Sayles & Jenks Manufacturing Co., woollen goods, started up after being shut down since Nov. 19, 1898; in July, increased wages; in August, card room damaged by fire; in November, weavers struck owing to dissatisfaction with pay and work; later, differences adjusted. *February.* Bradford Yarn Mills started up after a shutdown of several weeks; in March, picker room damaged by fire; in June, storehouse destroyed by fire. — Warren Steam Pump Works completed its pattern room and removed from its temporary quarters in the Slater Engine Co.'s buildings; in March, began erection of new boiler house. — Thorndike Co. started its No. 2 mill; new elevator installed in No. 1 mill; 2 wheels added to No. 2 mill and work begun on storage sheds; in April, increased wages; completed storage sheds and repaired looms in No. 3 mill; in May, added new drying machine; in June, added another story to main building; No. 3 mill shut down on account of water from the canal running into an excavation for a new

engine house; in July, added new engine to No. 2 mill; in October, foundation begun for new storehouse for No. 2 mill; No. 1 mill shut down temporarily on account of accident to machinery; in November, No. 2 mill ran nights; later, engine disabled and mill shut down temporarily; dyehouse, machine, and other shops equipped with electric lights; in December, increased wages. *March.* Torkelson Manufacturing Co., firearms, increased force and put in operation a new nickel-plating plant. — Warren Specialty Manufacturing Co. contracted to manufacture the Crown electric water heater. *April.* Slater Engine Co. ran nights. *August.* Warren Cotton Mills Corporation filed petition for dissolution.

Watertown. In March, Hollingsworth & Whitney Co. sold to Union Bag & Paper Co. *July.* Hood Rubber Co. started up after a temporary shutdown; in December, increased capital stock to \$100,000; in December, again increased capital stock, \$100,000. — Watertown Arsenal started up after a two weeks' shutdown during which an enlargement of plant was made and new engine installed.

Wayland. In July, Cochituate Shoe Co. formed to manufacture shoes.

Webster. In January, H. N. Slater Manufacturing Co. added 2 new boilers; in April, increased wages; in May, shut down for repairs; in August, carding and electric equipment damaged by lightning; later, changed over looms in new mill; in November, shut down owing to low water; in December, cambric works damaged by fire; increased wages. *February.* A. J. Bates & Co., shoes, shut down on account of accident to machinery; in November, the McKay sewers struck against reduction in wages. *March.* Joel Goddard & Co., sashes and blinds, resumed operations after a shutdown of 18 months. *April.* L. D. Perry, woollen yarn, ran portion of machinery nights; in August, discontinued night work; in November, shut down on account of low water. *May.* Strike occurred among laborers laying tracks for Worcester & Webster Street Railway Co. *June.* James Manning of Worcester bought the Webster Dye Works.

August. Horatio N. Slater of H. N. Slater Manufacturing Co. died, aged 65 years. Mr. Slater had always been connected with the large Slater establishments in Webster, and upon the death of the elder H. N. Slater, 11 years ago, assumed control of the entire business. The mills were originally established by Samuel Slater, who came from England in 1789, and was the first man in the United States to successfully manufacture cotton goods. The mills now in existence are for the manufacture of both cotton and woollen goods. The first mill was built by Samuel Slater in 1812, while from time to time, others have been built and additions and alterations made. The most recent was a new brick cotton mill at the North Village, built two years ago and fully equipped with modern machinery. The Slater Woollen Company, the most important of the plants situated at the South Village, was incorporated in 1865 with a capital of \$500,000. It contains 50 sets of cards and 17,000 spindles, employing about 900 hands. The products are broadcloth flannels, doeskin, and uniform cloth. The cotton mills at the North Village and cambric works at East Village furnish employment for about 800 persons. At the former plant Mr. Slater had recently added two new mills. These mills produce cotton piece goods, silesias, cambrics, and calicoes. As a result of some difficulty with the New York and New England Railroad, the elder Mr. Slater built a branch railroad 11 miles in length from Webster to the main line of the Boston and Albany Railroad, which has for the past 15 years been operated by that railroad company and has sidetracks and conveniences to the North and East village mills. Columbia block, containing the Slater New York store, was a later enterprise. The taxable value of the Slater interests in Webster was \$595,300. The first public water works in Webster were established by the Slater family and later absorbed by the town system. *December.* Chas. E. Brown, retired shoe manufacturer, died at Boston, aged 73 years.

Wellesley. In January, engine and boiler house of Charles River Paper Co. (Dillingham & Wiswall), damaged by fire; not operated again during the year. *April.* Portion of plant of Billings, Clapp, & Co. destroyed by explosion of gun cotton; business removed to Rhode Island.

Westborough. In May, box factory of F. V. Bartlett & Co. damaged by fire. *June.* American Saddle Co. and L. R. Bates ran on short time. — Gould & Walker, shoes, added new blower to finishing room. *October.* J. A. Atwood, bicycles, sold to S. A. Sawtelle. *November.* Gould & Walker dissolved; Walker & Dunning continued. — During the year, Hunt Manufacturing Co. and American Saddle Co. absorbed by the American Bicycle Co.

West Boylston. In April, West Boylston Manufacturing Co. increased wages; in June, purchased Williston Mills at Easthampton and moved to that town; capital stock increased \$100,000; local mill ran nights during month. — Geo. F. Howe of Howe, Morton, & Lovell, shoes, died, aged 74 years. *May.* Metropolitan Water Board granted extension of time to Clarendon Mills and West Boylston Manufacturing Co. for removal of plants. *June.* Samuel R. Warfield, retired cotton yarn manufacturer, died. *September.* Clarendon Mills began moving machinery to West Peterborough, N. H. *October.* L. M. Harris Manufacturing Co. sold plant to Metropolitan Water Board for \$125,000; company started in 1845 and had carried on business here ever since.

West Bridgewater. In December, Charles E. Tisdale, shoe manufacturer, died, aged 46 years.

West Brookfield. In January, McIntosh & Co., shoes, shut down for stock taking; announced reduction of wages when business should be resumed; in February, started up temporarily; stockholders of Quaboag Building Association, owners of the factory building, voted not to allow firm free rental of the property, the company having asked this concession in order to continue in business; in March, business absorbed by J. T. Woods Co. of Ware and machinery, etc., removed to that town; meanwhile, the bottomers, edge-trimmers, lasters, and McKay stitchers struck work, demanding an increase in pay; adjusted temporarily, treers then struck and their troubles were adjusted; in June, factory shut down and all work transferred to Ware. — Olmstead-Quaboag Corset Co. reduced wages; in May, increased force; in August, shut down for stock taking.

Westfield. In February, Vitriified Wheel Co. reduced capital stock to \$53,300. *April.* J. B. Laughton & Co., color pads, moved to larger quarters. *August.* Textile Manufacturing Co. began erection of new factory, 43 x 236 feet, 4 stories. *October.* W. Warren Thread Co. increased capital stock \$50,000; new power house completed, engine added, and new plant begun, portion of which was to be occupied by Westfield Braid Co., who closed its Becket plant and moved machinery here. — Pomeroy & Van Deusen and Searle Whip Co. moved to larger quarters. *November.* H. B. Smith Co. began addition to foundry, 46 x 150 feet, 2 stories. — Vacant organ factory formerly operated by Johnson & Son sold to August Hocker. — Edwin R. Van Deusen, retired whip and cigar manufacturer, died, aged 82 years. *December.* Westfield Braid Co. ran nights. — O'Brien & Devine of the Westfield Granite & Marble Co. purchased the Herlihy property to enlarge their works. — During the year, Lozier Bicycle Co. added blacksmith shop and office to plant, and was absorbed by the American Bicycle Co. — Springfield Paper Co. made additions and was absorbed by the American Writing Paper Co.

Westford. In April, Edw. A. Moore, woollen goods manufacturer, died, aged 74 years.

West Newbury. In January, Hayden Brown of S. C. Noyes & Co., horn combs, died, aged 80 years. *April.* W. B. Chaplin, shoes, increased force; in October, shut down for a month. *September.* S. C. Noyes & Co., combs, shut down for repairs.

Weston. In February, Hook & Hastings Co., church organs, increased force; in December, increased wages.

West Springfield. In April, boiler makers employed in the Boston & Albany R.R. shops struck for more pay or shorter hours; demands granted. *June.* The Worthy grist mill destroyed by fire; this mill was over 100 years old, and although there are no records concerning its early history, it was undoubtedly started a century ago and was operated by the people for their mutual good. It was a very small beginning but was the first mill of its kind in the neighborhood. As the mill passed from hand to hand, each owner made changes, and a valuable water-power was developed. Pelletier Ashley was the earliest owner recorded. He had it 60 or more years ago. Capt. Henry Phelon and his son, Capt. Henry A. Phelon, owned it in the '40's and early '50's, when it was purchased by J. L. Worthy. Soon after, he added to it two stories, and a few years later pushed out the original part from beneath and put in new wheels and floors. Two years ago he built a new front, and last winter still further improvements were made in the mill to give it greater capacity. In the century or more of the mill's existence, it had never previously been damaged by fire. *July.* Agawam Paper Co. shut down No. 2 mill finishing room on account of low water; absorbed by the American Writing Paper Co. — Southworth Paper Co. shut down for repairs. *November.* Boston & Albany R.R. Co.'s machine shops ran nights. — During the year, Mittineague Paper Co. erected new stock house.

West Stockbridge. In April, Pomeroy Mining Co. started up its idle furnaces. *October.* Employés of Stockbridge Marble Co. struck for back pay; later, settled satisfactorily.

Weymouth. In February, Bates & Slattery, shoes, closed out. *April.* M. C. Dizer & Co. and Gordon-Kiley Co., shoes, ran nights. *June.* One of the boilers of the East Weymouth Wool Scouring Co. exploded. — Slight fire occurred at fireworks factory of E. S. Hunt & Sons. *December.* Frederick E. Cook, retired shoe manufacturer, died, aged 63 years. — Abbott L. Lovell, of A. L. Lovell & Co., shoes, died; stock and fixtures of firm sold and business discontinued; no successor.

Whitman. In January, State Board of Arbitration rendered its report on the question of prices paid for lasting by the Commonwealth Shoe & Leather Co.* Lasters objected to the decision and appealed to the Governor, who declined to interfere; lasters left the factory Feb. 3, causing a shutdown of the balance of the factory. The company also wrote the Governor who referred the letter to the Board of Arbitration which simply acknowledged its receipt as there was nothing further to be done under the circumstances. Some of the departments started up again on the 13th, and on the 16th the lasters returned on an agreement to abide by the prices fixed by the State Board for 60 days; later, settled satisfactorily; in April, shut down for stock taking; in July, occupied new office building. — L. C. Bliss & Co. changed stitching room from contract work and ran same under their own direction. — John R. Graham of Quincy purchased the Whitman electric-light plant for improvement. *September.* J. E. Whidden leased old Dunbar factory and opened machine shop. — Hardening room at David A. Gurney & Co. damaged by fire. *October.* McKay work on tack machines formerly done at Ansonia, Conn., to be done at D. B. Gurney's in the future.

Williamsburg. In February, Haydenville Manufacturing Co. increased temporary force; during month subscriptions taken to perfect reorganization of company; in March, plant sold to new company known as The Haydenville Co.; plant shut down for stock taking; in April, business reorganized and work begun on full time; in June, increased wages of molders; in July, strappers struck on account of reduction in wages; compromised.

Williamstown. In February, Boston Finishing Works shut down 2 days; in March, shut down partially on account of muddy condition of river water; in May, added new napping machine. *March.* Williamstown Manufacturing Co. added new machinery; in April, increased wages; in October, began changing over its machinery to make fancy cotton goods; in December, increased wages.

Winchendon. In February the woodenware plant of William Brown & Sons sold to a Western syndicate; in July, works shut down permanently. — Employés of the late G. N. Goodspeed, manufacturer of woodworking machinery, formed a company known as the Goodspeed Machine Co. to succeed to the business left by Mr. Goodspeed.

Winchester. In April, Willard Mfg. Co. of Boston purchased large tract of land with announced purpose of erecting a factory for the manufacture of harness. *July.* Sylvanus Elliott's Son, organ actions, sold business to S. J. Symmes. *August.* John H. Bacon, retired manufacturer of felt goods, died, aged 88 years. *November.* Beggs & Cobb began erection of addition to factory.

WOBURN. In March, new plant of the Woburn Electric Light, Heat, & Power Co. completed. *October.* Patrick Calnan, manufacturer of shoe stock, died, aged 78 years. *November.* Leather factory of Beggs & Cobb and currying shop of B. F. Kimball & Co. destroyed by fire. *December.* Rebuilding of Beggs & Cobb's factory begun. — Machine shop of F. S. Bassett destroyed by fire. During the year, the following plants absorbed by the American Hide & Leather Co.: J. P. Crane & Co., Stephen Dow & Co., E. C. Cottel & Son, James Skinner Leather Co., Middlesex Leather Co., and Watauga Tanning Co.

WORCESTER. In January, Worcester Woollen Mill Co., formerly Adriatic Woollen Mill, started up. — Rice & Hutchins moved Marlborough plant to this city and installed new lasting machines. — Parisian Wrapper Manufacturing Co. destroyed by fire; in

* See Report of Board of Arbitration and Conciliation — 1899.

March, business continued in portion of Graton & Knight Manufacturing Co.'s plant; in April, purchased tract of land for new factory. — Washburn & Moen Manufacturing Co. absorbed by American Steel & Wire Co.; in March, increased wages; in July, began erection of steel plant; in December, portion of plant shut down owing to low water. — Wachusett Thread Co. organized under Maine laws to oppose trust; authorized capital, \$50,000; in March, leased quarters for 3 months. — Worcester Carpet Co. ran nights; in August, shut down for repairs. *February.* Wm. Hyland & Son, mattresses, started branch factory in Fall River. — J. H. Whittle purchased shop, tools, etc., of Cleveland Machine Works. — Worcester and Globe Corset Companies refused to enter corset trust. — William Hill started a sawmill in storehouse of old Dority Mill. — Strike of molders at Prespey Pero's foundry, started in October, 1898, declared off. — Beaver Brook Manufacturing Co. shut down indefinitely. — Allen Wall Paper Co. formed; in April, new building begun, 400 x 60 feet, 4 stories. *March.* Bay State Motor Co. dissolved by order of the Court. — Crompton & Knowles Loom Works ran on full time; in June, purchased plant of Gilbert Loom Co.; in December, began erection of addition, 50 x 60 feet, 4 stories. — Worcester Wire Co. absorbed by American Steel and Wire Co.

April. Graton & Knight Manufacturing Co., leather belting, purchased tract of land for an extension of factory. — Worcester Brewing Co. sold at auction to R. F. Taylor; in May, succeeded by Worcester Brewing Corporation. — Spencer Bottling Co. moved to this city from Spencer. — John R. Scott of Uxbridge leased the Piedmont Woollen Mill; in July, started up. — Fire damaged plants of Reed & Prince Manufacturing Co. and Forehand Arms Co. — A general molders strike inaugurated, affecting every foundry or machine shop in the city in which molders were employed; 7 out of the 11 employers granted their demands; 3 ran as non-union shops, and A. B. Davidson shut down indefinitely. — Loring Coes & Co. incorporated; authorized capital, \$50,000. — American Wheelock Engine Co. sold to International Power Co. of New York and machinery and stock moved to Providence, R. I. *May.* Dover Printing & Engraving Co. shut down on account of business troubles. — Draper Co. of Hopedale purchased Worcester Spinning Ring Co. — F. B. Williams and T. C. Booth organized Standard Foundry Co. and began erection of new plant; in August, began operations; in October, completed additional building. *June.* Picker room of Southgate Woollen Co. damaged by fire. — M. M. Whitman & Co., refrigerators, destroyed by fire. — L. B. Butler leased his satinnet mill to P. M. Pfaffman. — Glasgo Thread Co. absorbed by American Thread Co.; stock and machinery moved to Connecticut and local plant shut down. *July.* Worcester Optical Co. incorporated; authorized capital, \$50,000; machinery and stock of Richards Manufacturing Co. of Southbridge purchased and moved to this city. — Benjamin Raboin, sausages, sold to Simpson & Martin Co. — Worcester Thread Co. started in opposition to trust.

August. Davis & Buxton Stamping Co. began manufacturing cycle trimmings, ferules, etc. — Spencer Wire Co. began erection of new wire mill, 60 x 199 feet. — Drury-Gilmour Co., perfumes, etc., retired from business; no successor. *September.* Wachusett Mills began manufacture of iron cloth used for overcoat and ulster linings, resembling in appearance common haircloth. — Powell Planer Co. began addition to main shop, 90 x 160 feet; in December, new plant dedicated at a ball given to the employés. — Morgan Spring Co. increased force. — Forehand Arms Co. increased force and ran nights. — Globe Foundry Co. damaged by fire; in November, repairs made and started up on full time. *October.* Standard Foundry Co. completed additions to plant. — Warren Machine Co. sold to Rudolph Kirschbaum, Berlin, Germany. — Samuel H. Colton sold his interest in Wright & Colton Wire Cloth Co. and retired from business. — James S. Rand, retired straw hat manufacturer, died, aged 85 years, and Frank E. Heywood, shoe manufacturer, died, aged 40 years. — T. H. Buckley began erection of new factory, 70 x 100 feet. — Norton Emery Wheel Co. began erection of addition to factory, 45 x 65 feet, 4 stories. — Persons Manufacturing Co. incorporated to manufacture saddles of all kinds; authorized capital, \$5,000. — United States Envelope Co. issued revised list increasing prices; the principal reason for the increase was given as scarcity of water. *November.* Worcester Machine Screw Co. purchased machinery of the Chapman Bone Cutter plant. — Cereal Machine Co. started addition for an oven. — Brown Woollen Co. incorporated; authorized capital, \$15,000. — J. S. Southgate, retired last manufacturer, died, aged 58 years. — Chas. G. Reed, manufacturer of carriage wheels and materials, died, aged 64 years. — Augustus S. Wilcox, retired woollen goods manufacturer, and Arthur M. Evans of Evans & Co., granite, died. *December.* Deaths during month: Wm. H. Warren of Warren Machine Co., aged 61 years; Hamilton B. Fay, retired shoe manufacturer, aged 78 years; John S. Bowler of Bowler Brewing Co., aged 41 years. — Ruddy Thread Co. absorbed by the American Thread Co.

THE STATE. As in past years, the preceding chronology has been prepared from information supplied by manufacturers, and from other sources. It includes the more important events affecting the conduct of the industrial enterprises of the Commonwealth. Returns are made from 224 cities and towns as against 215 cities and towns reported in the volume for 1898.

In the following summary will be found a statement of the principal industrial events arranged by subjects and industries. The proper method of reading the table is as follows: In 1899, there were 160 instances of new firms or industries established in the several cities and towns; of these 2 were established to manufacture artisans' tools; 42 for the manufacture of boots and shoes; 5, clothing; 6, cotton goods, etc. There were 73 new buildings constructed during the year, 5 for firms engaged in the manufacture of boots and shoes; 10, cotton goods; 6, woollen goods, etc. Other lines may be read in a similar manner.

CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number	CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number
New Establishments, etc.	160	Buildings Constructed during the Year.	73
Artisans' tools,	2	Agricultural implements,	1
Boots and shoes,	42	Arms and ammunition,	1
Boxes, barrels, kegs, etc.,	3	Artisans' tools,	1
Brick, tiles, and sewer pipe,	3	Boots and shoes,	5
Brooms, brushes, and mops,	1	Boxes, barrels, kegs, etc.,	1
Carriages and wagons,	6	Brick, tiles, and sewer pipe,	2
Chemical preparations (compounded),	1	Carriages and wagons,	3
Clothing,	5	Clocks and watches,	1
Cordage and twine,	1	Clothing,	2
Cotton goods,	6	Cotton goods,	10
Electrical apparatus and appliances,	1	Drugs and medicines,	1
Flax, hemp, and jute goods,	1	Electrical apparatus and appliances,	2
Food preparations,	6	Fancy articles, etc.,	1
Furniture,	2	Food preparations,	1
Hosiery and knit goods,	2	Hosiery and knit goods,	2
Ivory, bone, shell, and horn goods,	3	Ivory, bone, shell, and horn goods,	2
Jewelry,	4	Jewelry,	3
Leather,	7	Leather,	3
Lumber,	2	Machines and machinery,	3
Machines and machinery,	9	Metals and metallic goods,	8
Metals and metallic goods,	12	Models, lasts, and patterns,	1
Models, lasts, and patterns,	1	Musical instruments and materials,	1
Musical instruments and materials,	2	Paper,	1
Paper,	4	Paper goods,	1
Paper goods,	2	Photographs and photographic materials,	1
Photographs and photographic materials,	1	Scientific instruments and appliances,	2
Print works, dye works, and bleacheries,	4	Silk and silk goods,	2
Rubber and elastic goods,	3	Stone,	3
Silk and silk goods,	1	Tobacco, snuff, and cigars,	1
Stone,	4	Woollen goods,	6
Straw and palm leaf goods,	1	Worsted goods,	1
Tobacco, snuff, and cigars,	1		
Toys and games (children's),	1	Machinery added to Plants.	175
Wooden goods,	1	Arms and ammunition,	1
Woollen goods,	14	Artisans' tools,	1
Worsted goods,	1	Boots and shoes,	19

CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number	CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number
Machinery added to Plants — Con.		Other Additions to Plants — Con.	
Boxes, barrels, kegs, etc.,	3	Fireworks and matches,	1
Brick, tiles, and sewer pipe, . . .	1	Flax, hemp, and jute goods, . . .	2
Buttons and dress trimmings, . . .	2	Food preparations,	2
Carpetings,	4	Hosiery and knit goods,	3
Carriages and wagons,	2	Ivory, bone, shell, and horn goods,	3
Clocks and watches,	1	Jewelry,	2
Clothing,	4	Leather,	4
Cotton goods,	57	Liquors (malt),	1
Electrical apparatus and appli-		Lumber,	2
ances,	2	Machines and machinery,	10
Emery and sand paper and cloth,		Metals and metallic goods, . . .	11
etc.,	1	Musical instruments and materials,	3
Flax, hemp, and jute goods, . . .	3	Oils and illuminating fluids, . . .	2
Food preparations,	2	Paper,	11
Hosiery and knit goods,	1	Polishes and dressing,	1
Leather,	1	Printing, publishing, and book-	
Lumber,	1	binding,	1
Machines and machinery,	6	Print works, dye works, and	
Metals and metallic goods, . . .	3	bleacheries,	7
Paper,	6	Rubber and elastic goods, . . .	2
Print works, dye works, and		Scientific instruments and appli-	
bleacheries,	5	ances,	1
Shipbuilding,	1	Shipbuilding,	1
Silk and silk goods,	3	Silk and silk goods,	1
Stone,	1	Stone,	4
Straw and palm leaf goods, . . .	2	Straw and palm leaf goods, . . .	2
Wooden goods,	2	Tallow, candles, soap, and grease,	1
Woollen goods,	30	Tobacco, snuff, and cigars, . . .	1
Worsted goods,	10	Woollen goods,	18
		Worsted goods,	3
Other Additions to Plants.	178	Addition of New Class of Product.	28
Agricultural implements,	1	Boots and shoes,	2
Arms and ammunition,	1	Clothing,	2
Artisans' tools,	1	Cotton goods,	5
Bicycles, tricycles, etc.,	3	Furniture,	1
Boots and shoes,	23	Machines and machinery, . . .	6
Boxes, barrels, kegs, etc.,	1	Metals and metallic goods, . . .	2
Boxes (paper),	1	Paper,	2
Brick, tiles, and sewer pipe, . . .	1	Printing, publishing, and book-	
Carpetings,	1	binding,	1
Cement, kaolin, lime, and plaster, .	1	Straw and palm leaf goods, . . .	1
Clocks and watches,	2	Wooden goods,	2
Clothing,	4	Woollen goods,	4
Cordage and twine,	1		
Cotton goods,	31	Rebuilding of Burned Fac- tories, etc.	19
Crayons, pencils, crucibles, etc., .	1	Boots and shoes,	1
Electrical apparatus and appli-		Boxes, barrels, kegs, etc., . . .	2
ances,	3	Brick, tiles, and sewer pipe, . . .	1
Emery and sand paper and cloth,		Carpetings,	1
etc.,	1		
Fertilizers,	1		

CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number	CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number
Rebuilding of Burned Factories, etc. — Con.		Changes from Private Firms to Corporations.	20
Cooking, lighting, and heating apparatus,	2	Artisans' tools,	1
Cotton goods,	2	Boots and shoes,	7
Hosiery and knit goods,	1	Clothing,	2
Ivory, bone, shell, and horn goods,	1	Furniture,	1
Leather,	1	Hosiery and knit goods,	1
Lumber,	1	Ivory, bone, shell, and horn goods,	1
Liquors (bottled) and carbonated beverages,	1	Jewelry,	2
Metals and metallic goods,	1	Liquors (bottled) and carbonated beverages,	1
Wooden goods,	1	Machines and machinery,	2
Woollen goods,	3	Musical instruments and materials,	1
		Worsted goods,	1
Removal to New or Larger Quarters.	43	Changes in Firms, Firm Names, etc.	64
Artisans' tools,	1	Bicycles, tricycles, etc.,	1
Boots and shoes,	28	Boots and shoes,	33
Boxes (paper),	1	Boxes, barrels, kegs, etc.,	2
Carriages and wagons,	1	Clothing,	1
Clothing,	1	Flax, hemp, and jute goods,	1
Jewelry,	1	Food preparations,	3
Leather,	1	Ivory, bone, shell, and horn goods,	1
Liquors (bottled) and carbonated beverages,	1	Jewelry,	2
Paper,	2	Leather,	2
Paper goods,	1	Liquors (malt),	1
Polishes and dressing,	1	Machines and machinery,	3
Printing, publishing, and book-binding,	1	Metals and metallic goods,	4
Toys and games (children's),	1	Models, lasts, and patterns,	1
Whips, lashes, and stocks,	2	Polishes and dressing,	1
		Printing, publishing, and book-binding,	1
Resumption of Business after Protracted Shutdowns.	29	Print works, dye works, and bleacheries,	1
Boots and shoes,	2	Rubber and elastic goods,	2
Building materials,	1	Tobacco, snuff, and cigars,	2
Cement, kaolin, lime, and plaster,	1	Wooden goods,	2
Clocks and watches,	1	Changes in Character of Product.	7
Cooking, lighting, and heating apparatus,	1	Boots and shoes,	1
Cordage and twine,	1	Carriages and wagons,	1
Cotton goods,	2	Leather,	1
Electroplating,	1	Liquors (malt),	1
Furniture,	1	Rubber and elastic goods,	1
Glass,	1	Woollen goods,	2
Hosiery and knit goods,	1	Changes in Character of Machinery.	12
Machines and machinery,	1	Boots and shoes,	1
Metals and metallic goods,	4	Cotton goods,	10
Stone,	1	Woollen goods,	1
Woollen goods,	10		

CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number	CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number
Consolidations of Firms and Corporations.	12	Increase in Number of Employees—Con.	
Boots and shoes,	3	Liquors (bottled) and carbonated beverages,	1
Boxes, barrels, kegs, etc., . . .	2	Machines and machinery, . . .	11
Brick, tiles, and sewer pipe, . . .	1	Metals and metallic goods, . . .	3
Metals and metallic goods, . . .	1	Musical instruments and materials, . . .	1
Musical instruments and materials, . . .	1	Print works, dye works, and bleacheries,	1
Paper,	1	Stone,	3
Polishes and dressing,	1	Straw and palm leaf goods, . . .	3
Saddlery and harness,	1	Woollen goods,	1
Tobacco, snuff, and cigars, . . .	1		
Removals of Firms and Industries to Massachusetts from other States.	3	Reduction in Number of Employees.	5
Boots and shoes,	3	Boots and shoes,	1
Removals of Firms and Industries from Massachusetts to other States.	9	Metals and metallic goods, . . .	1
Chemical preparations (compounded),	2	Paper,	1
Clothing,	1	Stone,	1
Cotton goods,	2	Woollen goods,	1
Hosiery and knit goods,	1		
Leather,	1	Increase in Rate of Wages Paid.	425
Machines and machinery,	1	Awnings, sails, tents, etc., . . .	4
Musical instruments and materials, . . .	1	Boots and shoes,	50
Removals from one Town to Another in Massachusetts.	27	Boxes, barrels, kegs, etc., . . .	1
Boots and shoes,	12	Boxes (paper),	3
Boxes, barrels, kegs, etc., . . .	1	Carpetings,	1
Boxes (paper),	1	Clothing,	1
Carpetings,	1	Cotton goods,	175
Furniture,	1	Flax, hemp, and jute goods, . . .	1
Leather,	2	Food preparations,	1
Liquors (bottled) and carbonated beverages,	1	Hosiery and knit goods,	2
Machines and machinery,	2	Machines and machinery,	2
Metals and metallic goods,	1	Metals and metallic goods,	10
Models, lasts, and patterns,	1	Musical instruments and materials, . . .	1
Musical instruments and materials, . . .	2	Printing, publishing, and book-binding,	1
Paper,	1	Print works, dye works, and bleacheries,	2
Stone,	1	Tobacco, snuff, and cigars, . . .	155
Increase in Number of Employees.	49	Woollen goods,	11
Arms and ammunition,	3	Worsted goods,	4
Boots and shoes,	13	Reduction in Rate of Wages Paid.	14
Carriages and wagons,	1	Boots and shoes,	8
Clocks and watches,	1	Brick, tiles, and sewer pipe, . . .	1
Clothing,	4	Carpetings,	1
Electroplating,	1	Clothing,	1
Hosiery and knit goods,	1	Cotton goods,	1
Jewelry,	1	Hosiery and knit goods,	1
		Musical instruments and materials, . . .	1

CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number	CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number
Increase in Hours of Labor per Day or Week.	53	Running Overtime and Nights — Con.	
Arms and ammunition,	1	Railroad construction and equip-ment,	1
Boots and shoes,	11	Rubber and elastic goods,	1
Carriages and wagons,	4	Scientific instruments and appli-ances,	1
Clothing,	2	Silk and silk goods,	1
Cooking, lighting, and heating ap- paratus,	1	Stone,	1
Cotton goods,	3	Straw and palm leaf goods,	2
Electroplating,	1	Wooden goods,	1
Leather,	1	Woollen goods,	53
Lumber,	2	Worsted goods,	12
Machines and machinery,	5		
Metals and metallic goods,	2	Introduction of Electric Lighting and Power into Factories, etc.	19
Paper,	1	Bicycles, tricycles, etc.,	1
Rubber and elastic goods,	3	Boots and shoes,	2
Stone,	1	Cotton goods,	3
Woollen goods,	15	Fancy articles, etc.,	1
		Ivory, bone, shell, and horn goods,	1
Reduction in Hours of Labor per Day or Week.	1	Leather,	1
Food preparations,	1	Lumber,	1
		Machines and machinery,	2
Running Overtime and Nights.	230	Paper,	1
Arms and ammunition,	3	Woollen goods,	6
Artisans' tools,	2		
Bicycles, tricycles, etc.,	4	Running on Short Time.	29
Boots and shoes,	19	Arms and ammunition,	1
Boxes, barrels, kegs, etc.,	2	Bicycles, tricycles, etc.,	1
Buttons and dress trimmings,	1	Boots and shoes,	3
Carpetings,	1	Carpetings,	1
Carriages and wagons,	1	Clothing,	1
Clocks and watches,	1	Cooking, lighting, and heating ap- paratus,	2
Clothing,	5	Cotton goods,	1
Cotton goods,	46	Hosiery and knit goods,	2
Drugs and medicines,	1	Jewelry,	1
Electrical apparatus and appli-ances,	3	Metals and metallic goods,	1
Electroplating,	1	Rubber and elastic goods,	1
Emery and sand paper and cloth, etc.,	1	Silk and silk goods,	1
Fancy articles, etc.,	1	Straw and palm leaf goods,	1
Flax, hemp, and jute goods,	1	Woollen goods,	10
Hosiery and knit goods,	3	Worsted goods,	2
Ivory, bone, shell, and horn goods,	4		
Jewelry,	7	Suspensions for Vacations.	65
Leather,	1	Artisans' tools,	2
Machines and machinery,	24	Bicycles, tricycles, etc.,	1
Metals and metallic goods,	11	Boots and shoes,	41
Paper,	10	Clocks and watches,	3
Print works, dye works, and bleacheries,	4	Clothing,	1
		Cotton goods,	5

CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number	CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number
Suspensions for Vacations — Con.		Suspensions Indefinite as to Duration — Con.	
Flax, hemp, and jute goods, . . .	1	Paper,	2
Leather goods,	1	Paper goods,	1
Machines and machinery, . . .	1	Printing, publishing, and book-binding,	1
Metals and metallic goods, . . .	1	Rubber and elastic goods, . . .	1
Paper,	2	Straw and palm leaf goods, . . .	1
Print works, dye works, and bleacheries,	1	Wooden goods,	3
Woollen goods,	3	Woollen goods,	13
Worsted goods,	2	Worsted goods,	1
Suspensions for Stock Taking.	46	Suspensions on account of Low Water.	24
Arms and ammunition,	2	Artisans' tools,	1
Artisans' tools,	2	Cotton goods,	10
Boots and shoes,	21	Lumber,	1
Boxes, barrels, kegs, etc., . . .	1	Machines and machinery, . . .	1
Carpetings,	1	Metals and metallic goods, . . .	2
Clothing,	4	Paper,	2
Cotton goods,	1	Silk and silk goods,	1
Electrical apparatus and appliances,	1	Wooden goods,	1
Machines and machinery,	1	Woollen goods,	4
Metals and metallic goods, . . .	3	Worsted goods,	1
Paper,	3	Suspensions on account of High Water.	8
Print works, dye works, and bleacheries,	1	Cotton goods,	3
Rubber and elastic goods, . . .	1	Hosiery and knit goods,	1
Silk and silk goods,	1	Paper,	4
Woollen goods,	1	Suspensions on account of Accidents to Machinery.	78
Worsted goods,	2	Arms and ammunition,	1
Suspensions Indefinite as to Duration.	54	Boots and shoes,	12
Arms and ammunition,	1	Boxes (paper),	1
Bicycles, tricycles, etc.,	1	Clocks and watches,	1
Boots and shoes,	3	Clothing,	3
Boxes, barrels, kegs, etc., . . .	2	Cotton goods,	43
Brick, tiles, and sewer pipe, . . .	1	Emery and sand paper and cloth, etc.,	1
Carpetings,	1	Leather,	1
Cement, kaolin, lime, and plaster, .	1	Metals and metallic goods, . . .	2
Clocks and watches,	1	Paper,	1
Clothing,	2	Print works, dye works, and bleacheries,	2
Cooking, lighting, and heating apparatus,	3	Shipbuilding,	1
Cotton goods,	4	Woollen goods,	7
Glass,	1	Worsted goods,	2
Hair work (animal and human), . .	1	Suspensions on account of Repairs and Improvements.	68
Leather,	2	Agricultural implements,	1
Lumber,	2	Arms and ammunition,	1
Machines and machinery,	2	Boots and shoes,	10
Metals and metallic goods,	3		

CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number	CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number
Suspensions on account of Repairs and Improvements — Con.		Suspensions on account of Retirement from Business (No Successor) — Con.	
Building materials,	1	Metals and metallic goods, . . .	2
Carpetings,	2	Models, lasts, and patterns, . . .	1
Clothing,	3	Paper,	1
Cotton goods,	6	Perfumes, toilet articles, etc., . . .	1
Electrical apparatus and appli- ances,	1	Saddlery and harness,	1
Flax, hemp, and jute goods, . . .	1	Shipbuilding,	1
Furniture,	1	Straw and palm leaf goods, . . .	1
Hosiery and knit goods,	3	Woollen goods,	3
Ivory, bone, shell, and horn goods,	1	Worsted goods,	1
Leather,	1		
Lumber,	2	Suspensions (cause not given).	99
Machines and machinery,	2	Bicycles, tricycles, etc.,	1
Metals and metallic goods,	4	Boots and shoes,	19
Paper,	10	Carpetings,	3
Print works, dye works, and bleacheries,	1	Clocks and watches,	1
Rubber and elastic goods,	1	Clothing,	2
Woollen goods,	16	Cooking, lighting, and heating ap- paratus,	4
		Cotton goods,	24
Suspensions for Curtailment of Production.	1	Hosiery and knit goods,	2
Bicycles, tricycles, etc.,	1	Jewelry,	2
		Leather,	1
Suspensions on account of Dull Trade.	13	Metals and metallic goods,	3
Boots and shoes,	1	Musical instruments and materials,	1
Cotton goods,	1	Paper,	6
Food preparations,	1	Print works, dye works, and bleacheries,	4
Hosiery and knit goods,	2	Rubber and elastic goods,	1
Leather,	1	Stone,	1
Paper,	1	Woollen goods,	14
Stone,	1	Worsted goods,	10
Straw and palm leaf goods,	1		
Woollen goods,	4	Strikes and Lockouts.	299
		Artisans' tools,	1
Suspensions on account of Retirement from Business (No Successor).	65	Awnings, sails, tents, etc.,	4
Artisans' tools,	2	Boots and shoes,	51
Bicycles, tricycles, etc.,	1	Boxes, barrels, kegs, etc.,	1
Boots and shoes,	27	Brick, tiles, and sewer pipe,	1
Carriages and wagons,	2	Building,	46
Clothing,	2	Buttons and dress trimming,	2
Cotton goods,	7	Carpetings,	2
Fireworks and matches,	1	Clothing,	2
Food preparations,	3	Cooking, lighting, and heating ap- paratus,	4
Furniture,	1	Cotton goods,	36
Jewelry,	1	Electrical apparatus and appli- ances,	2
Liquors (distilled),	1	Emery and sand paper and cloth, etc.,	1
Machines and machinery,	5		

CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number	CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number
Strikes and Lockouts—Con.		Sales of Plants in Whole or in Part—Con.	
Gas and residual products, . . .	2	Metals and metallic goods, . . .	13
Ivory, bone, shell, and horn goods,	3	Musical instruments and materials,	5
Leather,	15	Paints, colors, and crude chemicals,	1
Liquors (malt),	5	Paper,	3
Machines and machinery, . . .	38	Print works, dye works, and	
Metals and metallic goods, . . .	17	bleacheries,	1
Models, lasts, and patterns, . . .	1	Rubber and elastic goods, . . .	2
Paper,	2	Shipbuilding,	1
Printing, publishing, and book-		Silk and silk goods,	1
binding,	19	Stone,	2
Print works, dye works, and		Straw and palm leaf goods, . . .	1
bleacheries,	1	Tallow, candles, soap, and grease,	1
Railroad construction and equip-		Toys and games (children's), . . .	1
ment,	2	Whips, lashes, and stocks, . . .	1
Rubber and elastic goods, . . .	2	Wooden goods,	3
Shipbuilding,	1	Woollen goods,	14
Stone,	9	Worsted goods,	3
Straw and palm leaf goods, . . .	1		
Tallow, candles, soap, and grease,	1	Sales of Plants to Industrial	
Tobacco, snuff, and cigars, . . .	2	Combinations.	91
Wooden goods,	1	Artisans' tools,	3
Woollen goods,	17	Bicycles, tricycles, etc., . . .	4
Worsted goods,	7	Boxes, barrels, kegs, etc., . . .	1
Sales of Plants in Whole or		Brick, tiles, and sewer pipe, . . .	4
in Part.	137	Cotton goods,	12
Agricultural implements, . . .	1	Flax, hemp, and jute goods, . . .	1
Artisans' tools,	4	Leather,	10
Bicycles, tricycles, etc., . . .	3	Liquors (malt),	4
Boots and shoes,	23	Machines and machinery, . . .	6
Brick, tiles, and sewer pipe, . . .	5	Metals and metallic goods, . . .	4
Brooms, brushes, and mops, . . .	1	Paper,	25
Building materials,	1	Rubber and elastic goods, . . .	2
Buttons and dress trimmings, . . .	1	Wooden goods,	1
Carriages and wagons,	2	Woollen goods,	14
Clothing,	5		
Cotton goods,	11	Fires during the Year.	275
Crayons, pencils, crucibles, etc., .	1	Agricultural implements, . . .	1
Electrical apparatus and appli-		Arms and ammunition,	1
cances,	2	Artisans' tools,	1
Electroplating,	1	Bicycles, tricycles, etc., . . .	5
Fancy articles, etc.,	1	Boots and shoes,	36
Flax, hemp, and jute goods, . . .	1	Boxes, barrels, kegs, etc., . . .	9
Food preparations,	5	Brick, tiles, and sewer pipe, . . .	3
Hosiery and knit goods,	1	Building,	1
Leather,	4	Building materials,	1
Leather goods,	1	Carpetings,	3
Liquors (bottled) and carbonated		Carriages and wagons,	6
beverages,	1	Chemical preparations (com-	
Liquors (malt),	1	pounded),	1
Machines and machinery, . . .	8	Clothing,	7

CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number	CLASSIFICATION OF SUBJECTS AND INDUSTRIES.	Number
Fires during the Year — Con.		Plants damaged by Explosions.	5
Cooking, lighting, and heating apparatus,	5	Arms and ammunition,	2
Cordage and twine,	2	Chemical preparations (compounded),	1
Cotton goods,	34	Liquors (malt),	1
Crayons, pencils, crucibles, etc.,	1	Woollen goods,	1
Drugs and medicines,	1		
Electrical apparatus and appliances,	4	Deaths of Manufacturers.	111
Electroplating,	2	Agricultural implements,	1
Emery and sand paper and cloth, etc.,	2	Artisans' tools,	3
Fancy articles, etc.,	2	Boots and shoes,	33
Fireworks and matches,	1	Boxes, barrels, kegs, etc.,	2
Food preparations,	6	Boxes (paper),	1
Furniture,	13	Brick, tiles, and sewer pipe,	1
Gas and residual products,	1	Brooms, brushes, and mops,	1
Glass,	1	Building materials,	1
Glue, isinglass, and starch,	1	Carriages and wagons,	2
Hosiery and knit goods,	2	Clothing,	1
Ivory, bone, shell, and horn goods,	2	Cordage and twine,	2
Leather,	6	Cotton goods,	7
Leather goods,	1	Furniture,	2
Liquors (bottled) and carbonated beverages,	1	Ivory, bone, shell, and horn goods,	2
Lumber,	11	Jewelry,	2
Machines and machinery,	13	Leather,	3
Metals and metallic goods,	23	Leather goods,	1
Models, lasts, and patterns,	2	Liquors (bottled) and carbonated beverages,	1
Musical instruments and materials,	3	Liquors (malt),	2
Oils and illuminating fluids,	1	Machines and machinery,	7
Paints, colors, and crude chemicals,	2	Metals and metallic goods,	3
Paper,	4	Models, lasts, and patterns,	2
Polishes and dressing,	1	Musical instruments and materials,	3
Printing, publishing, and book-binding,	5	Oils and illuminating fluids,	1
Print works, dye works, and bleacheries,	2	Paints, colors, and crude chemicals,	1
Scientific instruments and appliances,	1	Paper,	3
Silk and silk goods,	1	Printing, publishing, and book-binding,	2
Sporting and athletic goods,	2	Railroad construction and equipment,	1
Stone,	1	Rubber and elastic goods,	1
Tallow, candles, soap, and grease,	2	Silk and silk goods,	1
Tobacco, snuff, and cigars,	3	Stone,	3
Wooden goods,	11	Straw and palm leaf goods,	1
Woollen goods,	24	Tallow, candles, soap, and grease,	2
		Whips, lashes, and stocks,	1
		Woollen goods,	11

Corporations and Capital Stock.

In the following table, the number of new corporations formed is shown, together with the amount of capital authorized by their charters; also the increases in capital stock; and the decreases in capital stock, classified by industries:

SUBJECTS AND INDUSTRIES.	Number	Amount of authorized Capital
New Corporations.	47	\$5,721,000
Boots and shoes,	6	225,000
Carriages and wagons,	2	1,150,000
Cotton goods,	6	825,000
Flax, hemp, and jute goods,	1	20,000
Glass,	2	100,000
Hosiery and knit goods,	4	487,000
Leather,	3	125,000
Liquors (malt),	1	100,000
Machines and machinery,	6	1,076,000
Metals and metallic goods,	5	168,000
Paper,	1	5,000
Print works, dye works, and bleacheries,	1	40,000
Rubber and elastic goods,	1	500,000
Saddlery and harness,	1	5,000
Scientific instruments and appliances,	2	150,000
Silk and silk goods,	1	130,000
Woollen goods,	4	615,000
Increases in Capital Stock.	20	\$4,225,500
Boots and shoes,	2	30,000
Clocks and watches,	1	1,000,000
Cotton goods,	11	2,653,000
Hosiery and knit goods,	1	100,000
Rubber and elastic goods,	1	200,000
Saddlery and harness,	1	10,000
Scientific instruments and appliances,	1	7,500
Silk and silk goods,	1	200,000
Woollen goods,	1	25,000
Decreases in Capital Stock.	7	\$1,110,800
Cotton goods,	5	907,500
Emery and sand paper and cloth, etc.,	1	53,300
Hosiery and knit goods,	1	150,000

Recapitulation. 1898, 1899.

In the following table we bring forward the subjects shown in the two preceding presentations in comparison with similar data contained in the Chronology for 1898:

CLASSIFICATION OF NEW FIRMS, BUILDINGS, SUSPENSIONS, FIRES, ETC.	NUMBER OF ESTABLISHMENTS, ETC.	
	1898	1899
New establishments, etc.,	90	160
Buildings constructed during the year,	23	73
Machinery added to plants,	175	175

Recapitulation. 1898, 1899 — Concluded.

CLASSIFICATION OF NEW FIRMS, BUILDINGS, SUSPENSIONS, FIRES, ETC.	NUMBER OF ESTABLISHMENTS, ETC.	
	1898	1899
Other additions to plants,	117	178
Addition of new class of product to manufacture,	16	28
Rebuilding of burned factories, etc.,	10	19
Removals to new or larger quarters,	31	43
Resumption of business after protracted shutdown,	57	29
Changes from private firms to corporations,	45	20
Changes in firms, firm names, etc.,	224	64
Changes in character of product,	3	7
Changes in character of machinery,	1	12
Consolidations of firms and corporations,	21	12
Removals of firms and industries to Massachusetts from other States,	5	3
Removal of firms and industries from Massachusetts to other States,	18	9
Removals from one town to another in Massachusetts,	34	27
Increase in number of employes,	29	49
Reduction in number of employes,	27	5
Increase in rate of wages paid,	6	425
Reduction in rate of wages paid,	52	14
Increase in hours of labor per day or week,	1	53
Reduction in hours of labor per day or week,	3	1
Running overtime and nights,	104	230
Introduction of electric lighting and power into factories, etc.,	10	19
Running on short time,	53	29
Suspensions for vacations,	11	65
Suspensions for stock taking,	32	46
Suspensions indefinite as to duration,	55	54
Suspensions on account of low water,	1	24
Suspensions on account of high water,	1	8
Suspensions on account of accidents to machinery,	8	78
Suspensions on account of repairs and improvements,	46	68
Suspensions for curtailment of production,	22	1
Suspensions on account of dull trade,	27	13
Suspensions on account of retirement from business (no successor),	46	65
Suspensions (cause not given),	83	99
Strikes and lockouts,	131	299
Sales of plants in whole or in part,	29	137
Sales of plants to industrial combinations,	12	91
Fires during the year,	172	275
Plants damaged by explosions,	8	5
Deaths of manufacturers,	120	111
New corporations,	52	47
Amount of authorized capital,	\$5,510,700	\$5,721,000
Increases in capital stock,	8	20
Amount of increase,	-	\$4,225,500
Decreases in capital stock,	4	7
Amount of decrease,	-	\$1,110,800
Net increase of capital stock,	-	\$3,114,700

INDUSTRIAL DIVIDENDS.

In the following table, we reproduce, as a matter of record, the annual dividends paid in certain manufacturing corporations doing business in this Commonwealth as compiled by Joseph G. Martin of Boston. Comparison is made between the rates paid in 1898 and 1899.

Dividends.

NAMES OF COMPANIES.	RATE OF DIVIDENDS		NAMES OF COMPANIES.	RATE OF DIVIDENDS	
	1898	1899		1898	1899
Acushnet Mill Corporation, .	12	16	Granite Mills,	1	6
American Glue Co. (pref.), .	8	8	Grinnell M'f'g Corporation, .	6	10
American Linen Co., . . .	1	4¼	Hamilton Manufacturing Co.,	2	4½
Am. Steel & Wire Co. (pref.),	0	5¼	Hamilton Woollen Co., . .	0	1
Am. Sugar Refinery Co., .	12	12	Hargraves Mills,	6	6
Am. Sugar Refinery Co.			Hathaway M'f'g Co., . . .	10	10
(pref.),	7	7	Heywood Bros. & Wakefield		
Am. Waltham Watch Co., .	6	*9	Co. (pref.),	4	4
Am. Woollen Co. (pref.), .	-	3½	Holyoke Water Power Co., .	10	10
Appleton Co.,	3	6	International Paper Co., .	1	2
Arlington Mills,	6	6	International Paper Co.		
Ashton Valve Co.,	6	7	(pref.),	3	6
Barnaby Manufacturing Co.,	1½	6	Kerr Thread Mills,	6	0
Barnard Manufacturing Co.,	0	3¼	King Philip Mills,	4½	7½
Bay State Brick Co., . . .	6	3	Lancaster Mills,	7	8
Boott Cotton Mills,	2	3	Laurel Lake Mills,	0	3¾
Border City M'f'g Co., . .	4	6	Lawrence M'f'g Co., . . .	6	6
Boston Belting Co., . . .	8	8	Lowell Bleachery,	2	4
Boston Duck Co.,	8	8	Lowell Hosiery Co., . . .	4	4
Boston Lead M'f'g Co., . .	6	3	Lowell Machine Shops, . .	6	9
Boston Woven Hose & Rub-			Lowell Manufacturing Co., .	†-	†-
ber Co. (pref.),	0	3	Lyman Mills,	0	4
Bowker Fertilizer Co., . .	6	7	Massachusetts Cotton Mills, .	3	6
Bristol Manufacturing Co., .	0	4½	Mechanics Mills,	0	5
Chace Mills,	0	6	Merchants M'f'g Co., . . .	0	1
Chapman Valve Co., . . .	12	12	Merrimack Chemical Co., .	0	7
Chicopee Manufacturing Co.,	3	6	Merrimac M'f'g Co., . . .	3	6
City Manufacturing Co., . .	3	6¾	Middlesex Co.,	6	6
Conanicut Mills,	0	6	Morse Twist Drill & Machine		
Cordis Mills,	10	10	Co.,	\$-	\$-
Cornell Mills,	5	†12½	Narragansett Mills,	1	5
Dartmouth Mills,	0	4½	National Biscuit Co., . . .	0	1
Davol Mills,	4	5½	National Biscuit Co. (pref.),	5¼	7
Diamond Match Co., . . .	10	10	National Lead Co.,	1	1
Dwight Manufacturing Co.,	9	10	National Lead Co. (pref.), .	7	7
Everett Mills,	4	5	Namkeag Steam Cotton Co.,	0	2
Fisher Manufacturing Co., .	4	5	New Bedford Copper Co., .	6	6
Flint Mills,	4	6	New Bedford Cordage Co., .	4½	6
Globe Buffer Co.,	8	8	New England Piano Co., .	0	3
Globe Yarn Mills,	0	1½	Osborn Mills,	0	5

* Also 16% stock dividend Oct. 12, when capital stock was increased \$1,000,000.

† 5 of this, extra.

‡ \$40 per share in 1898, \$25, in 1899.

§ \$8 per share in 1898 and 1899.

Dividends — Concluded.

NAMES OF COMPANIES.	RATE OF DIVIDENDS		NAMES OF COMPANIES.	RATE OF DIVIDENDS	
	1898	1899		1898	1899
Otis Co.,	8	10	Shaw Stocking Co.,	6	6
Pacific Mills,	10	10	Shove Mills,	0	2½
Parker Mills,	5	5¼	Stafford Mills,	4	*14
Pierce M'f'g Corporation,	4¼	7	Stevens Manufacturing Co.,	0	8
Pocasset Manufacturing Co.,	0	4½	Tecumseh Mills,	0	5
Potomaska Mills Corporation,	0	5	Thorndike Co.,	8	8
Putnam Nail Co.,	8	5	Tremont & Suffolk Mills,	6	†7
Reece Button Hole Machine Co.,	13	12	Troy Cotton & Woollen Manufactory,	11	18
Revere Rubber Co.,	4	4	Union Bag & Paper Co. (pref.),	0	3½
Reversible Collar Co.,	10	10	Union Cotton M'f'g Co.,	6	8½
Richard Borden M'f'g Co.,	3	7½	U. S. Envelope Co. (pref.),	2	7
Robeson Mills,	0	3	Wampanoag Mills,	0	6
Saco & Pettee Machine Co.,	6	6	Wamsutta Mills,	4½	6
Sagamore M'f'g Co.,	0	5½	Weetamoe Mills,	0	4½
Sanford Spinning Co.,	2	5½	Whitman Mills,	0	6
Seaconnet Mills,	3½	6			

* 6½ of this, extra.

† 33½ extra dividend Oct. 27, when capital stock was increased \$500,000.

STOCK PRICE QUOTATIONS.

In the following table is shown the highest and lowest stock price quotations for 1898 and 1899 for such sales as were made of industrial stock listed by the Boston Stock Exchange, together with the amount of capital stock on January 1, 1900, and the par value of stock. The figures were compiled by Joseph G. Martin of Boston.

Stock Price Quotations.

NAMES OF COMPANIES.	Capital Stock, Jan. 1, 1900	Par Value of Stock	STOCK PRICE QUOTATIONS			
			1898		1899	
			Highest	Lowest	Highest	Lowest
American Linen Co.,	\$800,000	\$100	*102½	—	108	90
American Soda Fountain Co. (com.),	1,250,000	100	10	2	5	—
Am. Soda Fountain Co. (1st pref.),	1,250,000	100	50	50	52	43
Am. Soda Fountain Co. (2d pref.),	1,250,000	100	—	—	9	—
American Sugar Refinery Co.,	36,968,000	100	146⅞	107¾	186	114⅞
Am. Sugar Refinery Co. (pref.),	36,968,000	100	116¼	103	122	110¼
American Waltham Watch Co.,	4,000,000	100	120	109	175	120
American Woollen Co.,	25,000,000	100	—	—	26¼	19
American Woollen Co. (pref.),	16,000,000	100	—	—	100	75
Appleton Co.,	450,000	100	290	100	106	101
Arkwright Mills,	450,000	100	—	—	*92½	—
Arlington Mills,	2,500,000	100	107¼	100	106¼	100
Atlantic Mills,	1,000,000	100	50⅞	38	65	44

* Only sale.

Stock Price Quotations — Continued.

NAMES OF COMPANIES.	Capital Stock, Jan. 1, 1900	Par Value of Stock	STOCK PRICE QUOTATIONS			
			1898		1899	
			Highest	Lowest	Highest	Lowest
Barnaby Manufacturing Co., . . .	\$400,000	\$100	70	50	90	70
Barnard Manufacturing Co., . . .	495,000	100	85	65	100	77½
Boott Cotton Mills,	1,200,000	1,000	900	700	822½	700
Border City Manufacturing Co., . . .	1,000,000	100	110	85	147½	105
Boston Belting Co.,	1,000,000	100	190½	172	210¼	185
Boston Duck Co.,	350,000	700	797½	750	975	860
Boston Manufacturing Co.,	800,000	1,000	460	400	462½	447½
Bowker Fertilizer Co.,	1,000,000	100	90	82	122	91
Chace Mills,	750,000	100	102½	90	110	95
Chicopee Manufacturing Co.,	1,000,000	100	70¼	49¾	95½	77¾
Cornell Mills,	400,000	100	107½	92	130	100
Corr Manufacturing Co.,	500,000	100	—	—	*87½	—
Davol Mills,	400,000	100	100	85	110	100
Dwight Manufacturing Co.,	1,200,000	500	797½	760	957½	852½
Everett Mills,	800,000	100	70	55	97	73¼
Flint Mills,	580,000	100	100	90	110	95
Globe Yarn Mills,	1,200,000	100	84	65	90	65
Granite Mills,	1,000,000	100	110	70	110	95
Grinnell M'f'g Corporation,	800,000	100	*142½	—	*185	—
Hamilton Manufacturing Co.,	1,800,000	1,000	680	617½	855	657½
Hamilton Woollen Co.,	1,000,000	100	40½	39½	51¼	40
Hargraves Mills,	800,000	100	100	97½	110	100
Holyoke Water Power Co.,	1,200,000	100	300	290	—	—
King Philip Mills,	1,000,000	100	100	85	135	102½
Lancaster Mills,	1,200,000	400	382	255	451¼	425
Laurel Lake Mills,	300,000	100	*98	—	122	35
Lawrence Manufacturing Co.,	750,000	100	107¼	100	127¼	108½
Lowell Bleachery,	400,000	100	90	75	82¼	75¼
Lowell Hosiery Co.,	200,000	100	*76½	—	86¼	85¾
Lowell Machine Shops,	900,000	500	670	600	800	651¼
Lowell Manufacturing Co.,	2,000,000	690	537½	475	602½	520
Lyman Mills,	1,470,000	100	60	46¾	71½	52¼
Massachusetts Cotton Mills,	1,800,000	100	82¾	76	106¼	90½
Mechanics Mills,	750,000	100	90	65	90	70
Merchants Manufacturing Co.,	800,000	100	110	75	105	75
Merrimack Chemical Co.,	600,000	50	—	—	52¾	48
Merrimack Manufacturing Co.,	2,500,000	1,000	950	865	1,170	965
Middlesex Co.,	750,000	100	120	115	118¼	115
Narragansett Mills,	400,000	100	104	90	108	90
Naumkeag Steam Cotton Co.,	1,500,000	100	51	40	71	51¾
New England Cotton Yarn Co. (pref.),	5,000,000	100	—	—	107½	101
Osborn Mills,	600,000	100	112½	93½	110½	90
Otis Co.,	800,000	1,000	1,607½	1,500	1,830	1,640
Pacific Mills,	2,500,000	1,000	2,000	1,850	2,225	2,000
Parker Mills,	800,000	100	101½	100	110	100
Pocasset Manufacturing Co.,	600,000	100	*120	—	117½	107
Potomaska Mills Corporation,	1,200,000	100	—	—	*90	*85¼
Putnam Nail Co.,	300,000	100	104	100	†101¾	—
Recce Button Hole Machine Co.,	1,000,000	10	17	8¾	14	11

* Only sale.

† One share.

Stock Price Quotations — Concluded.

NAMES OF COMPANIES.	Capital Stock, Jan. 1, 1900	Par Value of Stock	STOCK PRICE QUOTATIONS			
			1898		1899	
			Highest	Lowest	Highest	Lowest
Richard Borden Manufacturing Co.,	\$800,000	\$100	106	95	121	105
Robeson Mills,	78,000	100	*72	-	*72	-
Saco & Pettee Machine Co., . .	800,000	100	*85½	-	-	-
Sagamore Manufacturing Co., . .	900,000	100	107½	80	117½	98
Sanford Spinning Co.,	500,000	100	93	85	*97½	-
Seaconnet Mills,	600,000	100	100	88½	105	100
Shaw Stocking Co.,	360,000	100	125	125	120¼	119
Shove Mills,	550,000	100	100	85	105	85
Slade Mills,	200,000	100	50	10	102½	100
Stafford Mills,	1,000,000	100	105	90	116½	105
Tecumseh Mill,	500,000	100	105	90	117½	90
Thorndike Co.,	450,000	1,000	1,040	1,000	1,075	1,037½
Tremont & Suffolk Mills,	2,000,000	100	133¼	125¼	140	134
Troy Cotton & Woollen Manufactory,	300,000	500	1,250	910	1,225	1,100
Union Cotton Manufacturing Co., .	750,000	100	145	130	200	137½
Wamsutta Mills,	3,000,000	100	85¼	77¼	110¼	95¼
Wampanoag Mills,	750,000	100	105	92½	107½	92½
Wason Manufacturing Co.,	300,000	100	-	-	*75¼	-
Weetamoe Mills,	550,000	100	62½	35	67½	55

* Only sale.

BUSINESS FAILURES.

The number of commercial failures in Massachusetts in 1899 was 943 as against 1,003 in 1898, a decrease of 5.98 per cent in the later year. Of these, 355 were failures of manufacturing establishments in 1899, an increase over 1898 of 13.06 per cent. Notwithstanding the increase in number of failures, there was a shrinkage in total liabilities in 1899 of \$5,774,493, or 52.36 per cent as compared with the year 1898.

The data presented in the following tables were supplied by R. G. Dun & Co. of New York. The first table exhibits the number of failures from 1893 to 1899, classified as manufacturing, trading, and other commercial failures.

YEARS.	NUMBER OF COMMERCIAL FAILURES			
	Manufact- uring	Trading	Other Commercial	Totals
1893,	356	718	14	1,088
1894,	285	546	5	836
1895,	288	270	9	567
1896,	299	563	19	881
1897,	301	605	18	924
1898,	314	674	15	1,003
1899,	355	555	33	943

The second table exhibits the liabilities of the establishments noted in the preceding table, under the same classification.

YEARS.	CLASSIFIED FAILURES—LIABILITIES			
	Manufacturing	Trading	Other Commercial	Totals
1893,	\$9,594,092	\$12,629,179	\$485,060	\$22,708,331
1894,	7,219,977	9,014,919	232,735	16,467,631
1895,	5,376,080	4,849,891	716,667	10,942,638
1896,	9,044,924	6,898,372	164,533	16,107,829
1897,	13,202,944	5,740,421	816,046	19,759,411
1898,	11,029,392	6,449,165	74,366	17,552,923
1899,	5,254,899	10,071,111	430,201	15,756,211

In the third table we show the average amount of liabilities per failure for the years 1893 to 1899.

YEARS.	AVERAGE AMOUNT OF LIABILITIES PER FAILURE			
	Manufacturing	Trading	Other Commercial	Totals
1893,	\$26,950	\$17,589	\$34,647	\$20,872
1894,	25,333	16,511	46,547	19,698
1895,	18,667	17,963	79,630	19,299
1896,	30,251	12,253	8,660	18,284
1897,	43,864	9,488	45,336	21,385
1898,	35,125	9,568	4,958	17,500
1899,	14,803	18,146	13,036	16,709

From this table it is seen that the average amount of liabilities for each failure in manufacturing was smaller in 1899 than in any other year since 1893, while the average in trading reached the highest point since that year. The relative proportions of the liabilities in manufacturing, trading, and other failures of the total are shown in the next table.

YEARS.	PROPORTION OF CLASSIFIED LIABILITIES OF TOTAL LIABILITIES			
	Manufacturing	Trading	Other Commercial	Totals
1893,	42.25	55.61	2.14	100.00
1894,	43.85	54.74	1.41	100.00
1895,	49.13	44.32	6.55	100.00
1896,	56.15	42.83	1.02	100.00
1897,	66.82	29.05	4.13	100.00
1898,	62.84	36.74	0.42	100.00
1899,	33.35	63.92	2.73	100.00

Of the total amount of liabilities in all failures in 1899 in Massachusetts, one-third were among manufacturing establishments and slightly over six-tenths among those engaged in trading. The liabilities of the establishments included in the other section are small in comparison with those of the first two named. So far as manufacturing failures were concerned it is apparent that the financial loss was less in 1899 than in any other of the past seven years. The next table exhibits the proportion of assets of liabilities in all failures considered.

YEARS.	PROPORTION OF ASSETS OF LIABILITIES—TOTAL COMMERCIAL FAILURES		
	Assets	Liabilities	Percentages
1893,	\$12,649,296	\$22,708,331	55.70
1894,	6,861,021	16,467,631	41.66
1895,	4,342,003	10,942,638	39.68
1896,	8,738,546	16,107,829	54.25
1897,	13,951,470	19,759,411	70.61
1898,	11,384,683	17,552,923	64.86
1899,	8,656,581	15,756,211	54.94

The following summary from *Dun's Review* is of historical interest in connection with this subject: "The Massachusetts manufacturing defaults, in spite of the influence of the Squire collapse, were the smallest in any year, as were those of the other New England States, of New York, of the Middle States, and it may be added of the Central States. The same disaster swelled trading defaults by \$3,920,000 in five provision failures, besides two banks, with liabilities of about \$13,500,000, and two brokerage firms for \$250,000. In New York, the manufacturing failures were only about a quarter of those in two years of the previous five, and not half those of two other years, while the trading failures were also much less than half those of four previous years; but in brokerage the liabilities were nearly as large as in two other years, and in banking larger than in any previous year. But, in other Middle States, manufacturing and trading liabilities presented the same bright contrast, while in both other lines the failures would have been almost nothing but for that of a single large stock concern at Philadelphia wrecked by crime, and in no way caused by business conditions. It may be added that the Central States also showed trading defaults from \$3,000,000 to \$11,000,000 smaller than in any previous year, though some brokerage and promoting failures at Chicago, swelled the 'other commercial' defaults above the returns of previous years except one. The bare account of the aggregate of defaulted liabilities gives but a partial conception of the relation of failures to the commercial world. The average of defaulted liabilities per firm is a test which serves better than most to show how the defaults compare with the extension of business, but this year that average is for the first time less than \$80, the lowest in any previous year having been \$93.63 in 1880. A much better test is the ratio of defaults to actual payments in solvent business through the clearing houses. Here the ratio for 1899 is less than \$1 per one thousand, namely, only 97 cents, the lowest by more than a fifth ever reported in any year, and the lowest ever reported until this year in any quarter, save the third quarter of 1881. . . . It is well here to say that the failures for \$100,000 or more were only 34.7 per cent of the aggregate last year, 38.9 per cent in 1898, and 35.0 per cent in 1897, but 43.6 per cent in the bad year 1896, 42.2 per cent in 1895, and 38.3 per cent in 1894."

INDUSTRIAL COMBINATIONS.

During the year 1899, as shown on page 53, there were 91 instances of the transfer of plants to industrial combinations. Fourteen industries are represented, and in them occurred the consolidations which are noted below. As a matter of historical interest we have included in this review one or two combinations of firms, etc., outside of the Commonwealth, which, while not affecting any of our local establishments at present, may eventually control the allied Massachusetts concerns. We have also included a report on the attempt to form a print cloth combination, as the matter may again be brought forward, and it will be of interest to retain in permanent form the prices offered in 1899.

Bicycles.

A combination was organized in New York on July 19, 1899, known as the American Bicycle Co., and incorporated under the laws of New Jersey with an authorized capital of \$40,000,000 of which \$10,000,000 was 7 per cent cumulative preferred stock, \$20,000,000 common stock, and \$10,000,000 five per cent sinking fund gold debenture bonds, redeemable at the rate of \$250,000 per annum at 105. The manufacturers entering the combination were to receive for their plants, 30 per cent cash, 30 per cent preferred stock, and 50 per cent common stock, making 110 per cent in all, and were also privileged to subscribe for debenture bonds at 92½ per cent. The new company absorbed the properties and businesses of the following manufacturers of bicycles and bicycle parts, comprising nearly 60 per cent of the bicycle manufacturers of the United States and Canada:

Massachusetts.

H. A. Lozier & Co., Westfield; (with works at Thompsonville, Conn.; and Cleveland and Toledo, Ohio).

Lamb Manufacturing Co., Chicopee Falls.
American Saddle Co., Westborough, (and at Reading, Pa., Detroit, Mich.; and Cleveland, Elyria, and Canton, Ohio. This company had previously absorbed the Hunt Manufacturing Co., makers of bicycle saddles at Westborough, Mass.).

Connecticut.

Pope Manufacturing Co., Hartford.
Hartford Cycle Co., Hartford.
Hartford Rubber Works, Hartford.

New York.

Buffalo Cycle Manufacturing Co., Buffalo.
North Buffalo Wheel Co., Buffalo.
Nuttall Manufacturing Co., Nyack.
E. C. Stearns & Co. (and works at Toronto, Can.), Syracuse.
Barnes Cycle Co., Syracuse.
Syracuse Cycle Co., Syracuse.

Pennsylvania.

Black Manufacturing Co., Erie.
Acme Manufacturing Co., Reading.

Maryland.

Crawford Manufacturing Co., Hagerstown.

Ohio.

Shelby Cycle Manufacturing Co., Shelby.
Columbus Bicycle Co., Columbus.
Geneva Cycle Co., Geneva.
Viking Manufacturing Co., Toledo.
Fay Manufacturing Co., Elyria.
Colton Cycle Co., Toledo.
Cleveland Machine Screw Co. (steel ball and stamping department only), Cleveland.
White Sewing Machine Co. (bicycle and pedal department only), Cleveland.

Illinois.

Gormully & Jeffery Co., Chicago.
Western Wheel Works, Chicago.
Monarch Cycle Manufacturing Co., Chicago.
A. Featherstone & Co., Chicago.
Ames & Frost Co., Chicago.
Fanning Cycle Manufacturing Co., Chicago.
Geo. L. Thompson Manufacturing Co., Chicago.
Hart & Cooley Manufacturing Co., Chicago.

Illinois — Concluded.

H. A. Christy & Co. (and plants at Paris, France, and Walkersville, Canada),	Chicago.
Stover Bicycle Manufacturing Co.,	Freeport.
Peoria Rubber & Manufacturing Co.,	Peoria.

Indiana.

Indiana Bicycle Co.,	Indianapolis.
Indianapolis Rubber Co.,	Indianapolis.
Indiana Novelty Manufacturing Co.,	Plymouth.
Indianapolis Chain & Stamping Co.,	Indianapolis.

Michigan.

Grand Rapids Cycle Co.,	Grand Rapids.
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Wisconsin.

Sterling Cycle Works,	Kenosha.
A. D. Melselbach,	Milwaukee.
Milwaukee Engineering Co.,	Milwaukee.
Milwaukee Manufacturing Co.,	Milwaukee.
C. J. Smith & Sons Co.,	Milwaukee.

In the official statement issued by the company the announcement was made that the term "Division" would be given to each constituent company, and that the business of such companies would be conducted under supervision from the general headquarters at New York.

Bobbins and Shuttles.

On July 31, 1899, the U. S. Bobbin and Shuttle Co. was incorporated under the laws of New Jersey with a capitalization of \$2,300,000, divided as follows: Common stock, \$1,200,000; seven per cent cumulative preferred stock, \$800,000; and first mortgage six per cent 20-year gold bonds, \$300,000. The following plants were purchased:

Fall River Bobbin & Shuttle Co.,	Fall River.
T. J. Hale,	Lawrence.
L. Sprague Co.,	Lawrence.
Wm. H. Parker & Sons,	Lowell.
The James Baldwin Co.,	Manchester, N. H.
Woonsocket Bobbin Co.,	Woonsocket, R. I.

Breweries.

On April 17, 1899, the Springfield Breweries Co. consolidated the plants of the Springfield Brewing Co. and Highland Brewing Co. of Springfield and the Hampden and Consumers Brewing Companies of Chicopee, having been chartered under the laws of West Virginia for this purpose. The entire business was taken as of January 1, 1899, and none of the expense of incorporation or of issuance of stock and bonds was a charge on the new company. The company started with a capitalization consisting of \$1,150,000 common stock, \$1,150,000 cumulative eight per cent preferred stock, and \$1,150,000 sinking fund six per cent gold bonds. Of this all but \$700,000 bonds, \$500,000 preferred stock, and \$200,000 common stock were retained by the persons interested. The bonds were a consolidated mortgage on the lands, buildings, and machinery of the new company, and beginning January 1, 1900, a sinking fund of \$25,000 per annum was to be set aside to retire the bonds. Both kinds of stock were non-assessable and non-liaible.

Bricks.

During the year there were several local combinations organized to protect certain establishments in the sale of their products. Each was guaranteed its share of the business, and the arrangement, while not precluding the sale of brick at the several yards, provided that all such sales were to be reported to the general agent. As a rule, the agreement was for one year.

The Springfield Brick Co. was incorporated with authorized capital of \$75,000, and absorbed the Agawam Brick Co. and Wellington Brick Co. of Springfield, Coomes Brick Co. of Chicopee, and Hennessey Brick Co. of Longmeadow.

In December, the Union Brick Co. of New England was incorporated under the laws of New Jersey and it was proposed to issue \$2,000,000 in six per cent common stock, \$1,500,000 in seven per cent preferred stock, and \$1,750,000 in sinking fund mortgage bonds.

Carpetings.

In April, an attempt was made to form a carpet combination with a capitalization of \$50,000,000. The proposal was to buy business and plants, paying one-half cash to represent the investment in real estate and machinery, and one-half in common stock of the new corporation, with cash for material on hand; the cash to make the purchases to be raised by the sale of seven per cent cumulative stock. This, however, failed of realization. In November, it was proposed to form a combination of Massachusetts carpet mills, but the matter was delayed by the withdrawal of one of the parties; and finally, in December, the Lowell Manufacturing Co. and the Bigelow Carpet Co. consolidated by incorporation under Massachusetts laws with the title of Bigelow Carpet Co., and an authorized capital of \$4,030,000.

Car Wheels.

In June, the International Car Wheel Co. was incorporated under New Jersey laws, with an authorized capital of \$15,000,000 divided into \$10,000,000 common stock and \$5,000,000 cumulative preferred stock. The following concerns were absorbed:

Swett Car Wheel & Foundry Co.,	Boston.
Boston Car Wheel Co.,	Boston.
New York Car Wheel Works,	New York, Buffalo, and Philadelphia.
Ramapo Car Wheel Co.,	Ramapo, N. J.
Weston Furnace Co.,	Manistique, Mich.
Pittsburgh Car Wheel Co.,	Pittsburgh, Pa.
St. Thomas Car Wheel Co.,	Ontario, Can.
Hamilton Car Wheel & Foundry Co.,	Montreal, Can.
John McDougall & Co.,	Montreal, Can.

Cotton Duck.

In July, the Mt. Vernon-Woodberry Co. was incorporated under the laws of Delaware. This company was a consolidation of 14 cotton duck mills situated in different parts of the country, including four operated by the Mt. Vernon Co., five operated by the Woodbury Manufacturing Co., William E. Hopper & Sons, and the Laurel and Franklinville Mills of Baltimore County, Maryland. The Tallahassee Mills of Alabama, Columbia Mills of South Carolina, and Greenwoods Co. of New Hartford, Conn., were also included in the combination. The issue of stock was \$9,500,000 common and \$14,000,000 mortgage bonds.

Cotton Print Cloth.

In August, an English syndicate endeavored to promote consolidation among the print cloth mills of Fall River and the attempt was followed by similar efforts of two other syndicates. None were successful, and the general prosperity in the industry seemed to foster the belief that the prices offered for the stock were too low. The following table shows the prices offered by the syndicate for the stock which they desired to purchase:

MILLS.	Trust Price per Share	Capital- ization per Spindle	By Last Sale	By Trust Bid
American Linen Co.,	\$119	\$8.62	\$8.00	\$10.07
Arkwright Mills,	100	12.40	-	16.71
Barnard Manufacturing Co.,	103	7.66	10.07	12.09
Border City Manufacturing Co.,	150	8.38	8.75	12.13
Chace Mills,	131	6.62	9.70	11.16
Cornell Mills,	135	9.54	10.62	12.05
Davol Mills,	115	8.89	7.69	10.55
Durfee Mills,	950	3.80	-	10.94

MILLS.	Trust Price per Share	Capital- ization per Spindle	By Last Sale	By Trust Bid
Fall River Manufactory,	112	\$4.97	-	\$9.68
Flint Mills,	115	11.41	-	12.63
Granite Mills,	125	8.34	\$10.11	11.98
King Philip Mills,	145	8.31	10.95	13.03
Laurel Lake Mills,	140	7.09	9.09	11.94
Merchants Manufacturing Co.,	121	6.07	7.89	10.08
Mechanics Mills,	102	12.92	8.55	12.04
Metacomet Mills,	45	9.69	-	10.15
Narragansett Mills,	118	8.08	8.89	10.96
Osborn Mills,	123	8.54	8.44	10.62
Pocasset Manufacturing Co.,	132	7.77	7.93	9.84
Richard Borden Manufacturing Co., . .	143	9.23	8.41	10.99
Sagamore Manufacturing Co.,	122	9.92	9.73	11.22
Seaconnet Mills,	114	9.20	12.50	13.79
Shove Mills,	112	7.78	10.99	12.70
Stafford Mills,	120	12.07	11.98	13.18
Tecumseh Mill,	116	6.51	9.22	10.56
Troy Cotton and Woollen Manufactory, .	1,550	6.79	-	17.32
Union Cotton Manufacturing Co., . . .	200	6.84	10.30	12.30
Wampanoag Mills,	116	8.08	9.82	11.01
Weetamoe Mills,	72	12.46	9.88	11.38

The first column shows the prices bid by the syndicate; the second, the capitalization of the mill per spindle; the third, the price per spindle at which the shares of the mill sold, and the fourth, the price at which the shares are valued per spindle. The wide difference in some of the mills' valuations per spindle may be explained by the difference in age and condition of the equipments, the location of the mills, their real estate, and the surpluses which some of the corporations have accumulated. For example, the Durfee mill, which shows a capitalization of only \$3.80 per spindle, is considered as worth \$10.94 by the promoters of the trust. This is due to the surplus which has been allowed to accumulate for purposes of new buildings and equipment. In the case of the Troy Cotton and Woollen Manufactory, the real estate owned by the company in the center of the city brings up its valuation to \$17.32 per spindle, or \$10.53 in excess of the amount shown by the capitalization.

Cotton Thread.

In June, the American Thread Co. was incorporated and absorbed the Warren Thread Co. of Ashland, and, later, Finlayson, Bousfield, & Co. of Grafton; also the Glasgo and Ruddy Thread Cos. of Worcester.

Cotton Yarn.

In July, the New England Cotton Yarn Co. was incorporated under the laws of New Jersey with an authorized capital divided as follows: \$6,500,000 first mortgage 5 per cent bonds, \$6,500,000 cumulative 7 per cent preferred stock, and \$5,000,000 common stock. The following mills were absorbed:

North Dighton Cotton Co.,	Dighton.
Globe Yarn Mills,	Fall River.
Sanford Spinning Co.,	Fall River.
Bennett Spinning Co.,	New Bedford.
Howland Mills Corporation,	New Bedford.
New Bedford Spinning Co.,	New Bedford.
Rotch Spinning Corporation,	New Bedford.
Cohannet Mills,	Taunton.
Nemasket Mills,	Taunton.

Felt.

In February, the American Felt Co. was organized in New York and incorporated with a capital divided as follows: \$2,500,000 common stock, \$2,500,000 cumulative preferred stock, and \$500,000 bonds. The following mills were absorbed:

Waite Felting Co.,	. . . . .	Franklin.
P. A. Waite,	. . . . .	Millis.
City Mills Co.,	. . . . .	Norfolk.
Tingue, House, & Co.,	. . . . .	Glenville, Conn.
Hawthorne Mills,	. . . . .	Pictou, N. J.
American Felt Manufacturing Co.,	. . . . .	Dolgeville, N. Y.

Fertilizers.

In February, steps were taken for the organization of the various fertilizer concerns as the American Agricultural Chemical Co. with an authorized capital of \$40,000,000 divided into \$20,000,000 6 per cent cumulative preferred stock and \$20,000,000 common stock. The first issue to be limited to \$34,000,000 divided into 170,000 \$100 shares of preferred and the same amount of common, leaving \$6,000,000 in the treasury. The following concerns were included: Bradley Fertilizer Co. and Bowker Fertilizer Co. of Boston, and Lester Agricultural Chemical Co., Read Fertilizer Co., H. J. Baker & Co., Liebig Fertilizer Co., Crocker Fertilizer Co., M. L. Shoemaker & Co., Sharpless & Carpenter, I. P. Thomas, Preston Fertilizer Co., G. W. Grafflin & Son, Cumberland Bone Phosphate Co., Quinnpiac Co., Williams & Clark Fertilizer Co., and Lazaretto Guano Co.

Leather.

In April, the American Hide & Leather Co. was incorporated under New Jersey laws with a capital divided as follows: \$17,500,000 in common stock, \$17,500,000 in cumulative preferred stock, and \$10,000,000 in mortgage bonds. Among others, the following Massachusetts concerns were absorbed:

Bernard, Friedman, & Co.,	. . . . .	Danvers.
White Bros.,	. . . . .	Lowell.
M. Robson Leather Co.,	. . . . .	Salem.
Wm. Tidd & Co.,	. . . . .	Stoneham.
J. P. Crane & Co.,	. . . . .	Woburn.
Stephen Dow & Co.,	. . . . .	Woburn.
E. C. Cottle & Son,	. . . . .	Woburn.
Middlesex Leather Co.,	. . . . .	Woburn.
Jas. Skinner Leather Co.,	. . . . .	Woburn.
Watauga Tanning Co.,	. . . . .	Woburn.

Looms.

In June, the Crompton & Knowles Loom Works absorbed the Gilbert Loom Co. of Worcester. On February 3, 1900, the corporation was reorganized under Chapter 51, Acts of 1900, to purchase the old corporation, which had been organized under the laws of Rhode Island, and to manufacture, buy, and sell textiles, and textile and other machinery. The other sections of the Act of incorporation are as follows:

SECTION 2. The capital stock of said corporation shall be three million dollars, and said corporation shall not transact any business until the full amount of capital has been paid in.

SECTION 3. The capital stock of said corporation shall be divided into seven thousand five hundred shares of preferred stock and twenty-two thousand five hundred shares of common stock, the par value of both classes of stock to be one hundred dollars for each share.

SECTION 4. The holders of said preferred stock shall be entitled to receive out of the net profits of the corporation dividends at the rate of eight per cent per annum before any dividends are paid upon the common stock; said dividends on the preferred stock to be cumulative, but without interest on deferred payments. Holders of said preferred stock shall be entitled to all the privileges of common stockholders, except the right to vote upon said preferred stock.

SECTION 5. In case of the dissolution or termination of said corporation the holders of preferred stock shall be entitled to payment of the par value of their shares, together with dividends due upon the same, before any payments are made to the holders of common stock.

SECTION 6. Each certificate of the preferred stock shall have printed upon its face section four of this act.

Paper.

In February, negotiations were begun for the formation of a combination to include all the mills making fine writing paper. Later in the year, the American Writing Paper Co. was incorporated with an authorized capital of \$25,000,000, and a bonded debt of \$17,000,000. The capital stock was divided, one-half comprising 7 per cent cumulative preferred stock, having preferences both as to assets and dividends, and one-half in common stock, of which \$3,000,000 was to remain in the treasury of the company. The debt was secured by five per cent sinking fund gold bonds, \$8,400,000 of which were taken by the manufacturers and private investors, and the remaining \$8,600,000 placed on the market at par. The Massachusetts mills absorbed by this combination were as follows: Albion Paper Co., Beebe & Holbrook, Connecticut River Paper Co., Crocker Manufacturing Co., G. R. Dickinson Paper Co., Esleek Paper Co., G. C. Gill Paper Co., Holyoke Paper Co., Linden Paper Co., Massasoit Paper Co., Nonotuck Paper Co., Norman Paper Co., Parsons Paper Co., Riverside Paper Co., and Wauregan Paper Co., all of Holyoke; Chester Paper Co., Huntington; G. K. Baird Paper Co., Eaton, May, & Robbins Paper Co., Hurlbut Paper Co., and Hurlbut Stationery Co., Lee; Springdale Paper Co., Westfield; and Agawam Paper Co., West Springfield. Outside of Massachusetts, the following were included: Harding Paper Co., Ohio; Oakland Paper Co., Platner & Porter Paper Manufacturing Co., and Windsor Paper Co., Connecticut; Shattuck & Babcock Paper Co., Wisconsin; and Syms & Dudley Paper Co., Michigan.

Paper Bags.

In March, the Union Bag & Paper Co., reorganized with a capitalization divided as follows: \$16,000,000 common stock and \$11,000,000 cumulative preferred stock, and absorbed the Hollingsworth & Whitney Co. of Watertown.

Pumps.

In March, the International Steam Pump Co. organized under New Jersey laws with a capital of \$27,500,000, divided into \$12,500,000 cumulative 6 per cent preferred stock and \$15,000,000 common stock. Among the concerns announced as being members of this combination were

George F. Blake Manufacturing Co.,	Cambridge.
Deane Steam Pump Works,	Holyoke.
Knowles Steam Pump Works,	Warren.
Henry R. Worthington Corporation,	Brooklyn, N. Y., and Elizabethport, N. J.
Laidlaw-Dunn-Gordon Co.,	Cincinnati, O.
Snow Steam Pump Works,	Buffalo, N. Y.

Rubber Goods.

In May, the Rubber Goods Manufacturing Co. was organized under the laws of New Jersey and authorized to issue \$25,000,000 of 7 per cent cumulative preferred stock and an equal amount of common stock. The company acquired the following plants:

Sawyer Belting Co.,	Cambridge.
Stoughton Rubber Co.,	Stoughton.
Chicago Rubber Works,	Chicago, Ill.
Cleveland Rubber Works,	Cleveland, O.
New York Belting & Packing Co.,	Passaic, N. J.
New York Belting & Packing Co.,	Sandy Hook, Conn.
Fabric Fire Hose Co.,	Warwick, N. Y.
Morgan & Wright (75 per cent of capital stock),	Chicago, Ill.
Peerless Rubber Manufacturing Co.,	New York.
India Rubber Co.,	Akron, O.
Hartford Rubber Works,	Hartford, Conn.
Indianapolis Rubber Co.,	Indianapolis, Ind.
Peoria Rubber & Manufacturing Co.,	Peoria, Ill.

Shoe Machinery.

In February, the United Shoe Machinery Co. was organized under New Jersey laws with an authorized capital of \$25,000,000, divided equally between cumulative preferred and common stock. Among the many concerns absorbed was the Goodyear Shoe Machinery Co., the McKay Shoe Machinery Co., and the Consolidated and McKay Lasting Machine Co.

In October, the Standard Shoe Machinery Co. was incorporated under the laws of New Jersey with an authorized capital of \$5,000,000, of which \$3,000,000 was common and \$2,000,000 cumulative preferred stock. This company acquired several large concerns which were not combined with the United Shoe Machinery Co.

Shoe Tools.

The Boston Shoe Tool Co. absorbed the Globe Shoe Tool Co., A. L. Perkins Co., and F. M. Stevens & Co., all of Boston.

Tires.

In April, the International Automobile & Vehicle Tire Co., with headquarters in New York, absorbed the Newton Rubber Co., and in May, purchased the plant of L. C. Chase & Co. of Chelsea. This company's capital of \$3,000,000 was divided equally between common and non-cumulative preferred stock.

Tubes.

In July, the National Tube Co. was organized under New Jersey laws with a capital of \$80,000,000 divided equally into 7 per cent cumulative preferred stock and common stock. No mortgage can be placed on the realty of the company without the consent of 80 per cent of the stock, common and preferred, and all dividends exceeding \$2,800,000 go to the common stockholders. The plants controlled number 21 and are mostly situated in Pennsylvania.

Wire.

In March, the American Steel & Wire Co. reorganized under New Jersey laws and issued \$50,000,000 of common and \$40,000,000 of cumulative preferred stock. This company absorbed the Washburn & Moen Manufacturing Co. and the Worcester Wire Co., both of Worcester.

Woollen Goods.

In January, the American Woollen Co. was incorporated with a capital divided into \$40,000,000 common stock and \$25,000,000 cumulative preferred stock. Ray's Woollen Co. at Franklin was the first mill acquired and later the following plants were taken: M. Collins Woollen Manufacturing Co., Dracut; Chase Woollen Co., Dudley; Jesse Eddy Manufacturing Co., Fall River; Beoli Co. and Fitchburg Worsted Co., Fitchburg; Washington Mills, Lawrence; Faulkner Mills, Lowell; Assabet Manufacturing Co., Maynard; and Plymouth Woollen Co., Plymouth.

Authorized Capitalization.

In the following table, we present the names of the industrial combinations which were formed during 1899 and were in full operation at the close of the year, together with the authorized capital, divided into common stock, preferred stock (cumulative and non-cumulative), and mortgage bonds. Only combinations of manufacturers which were actually effected are presented, no note being made of consolidations which were merely anticipated or proposed. The facts relating to them have been taken from the *Commercial and Financial Chronicle*, published by Wm. B. Dana Co. of New York.

NAMES OF COMPANIES.	AUTHORIZED CAPITAL			
	Common Stock	Preferred Stock	Bonds	Total
American Agricultural Chemical Co.,	\$20,000,000	*\$20,000,000	-	\$40,000,000
American Alkali Co.,	24,000,000	*6,000,000	-	30,000,000
American Beet Sugar Co.,	15,000,000	†5,000,000	-	20,000,000
American Bicycle Co.,	20,000,000	10,000,000	\$ 10,000,000	40,000,000
American Bridge Co.,	40,500,000	*27,000,000	-	67,500,000
American Car & Foundry Co., . . .	30,000,000	†30,000,000	-	60,000,000
American Cement Co.,	2,100,000	-	1,000,000	3,100,000
American Chiclé Co.,	6,000,000	*3,000,000	-	9,000,000
American Electric Vehicle Co., . .	4,000,000	1,000,000	-	5,000,000
American Felt Co.,	2,500,000	*2,500,000	500,000	5,500,000
American Hide & Leather Co., . . .	17,500,000	*17,500,000	10,000,000	45,000,000
American Ice Co.,	30,000,000	*30,000,000	-	60,000,000
Am. Iron & Steel Manufacturing Co.,	17,000,000	*3,000,000	-	20,000,000
Am. Pastry & Manufacturing Co., . .	2,000,000	*1,000,000	-	3,000,000
American Radiator Co.,	5,000,000	*5,000,000	-	10,000,000
American School Furniture Co., . .	5,000,000	*5,000,000	1,500,000	11,500,000
American Shipbuilding Co.,	15,000,000	†15,000,000	-	30,000,000
American Steel Hoop Co.,	19,000,000	*14,000,000	-	33,000,000
American Steel & Wire Co.,	50,000,000	*40,000,000	-	90,000,000
American Window Glass Co.,	13,000,000	*4,000,000	-	17,000,000
American Woollen Co.,	40,000,000	*25,000,000	-	65,000,000
American Writing Paper Co.,	12,500,000	*12,500,000	17,000,000	42,000,000
Artificial Lumber Co.,	8,500,000	*3,500,000	-	12,000,000
Asphalt Co. of America,	30,000,000	-	30,000,000	60,000,000
Baltimore Brick Co.,	1,200,000	*900,000	1,500,000	3,600,000
Bigelow Carpet Co.,	4,030,000	-	-†	4,030,000
Borax Consolidated Co.,	3,000,000	*4,000,000	5,000,000	12,000,000
Central Foundry Co.,	7,000,000	*7,000,000	4,000,000	18,000,000
Compressed Air Capsule Co.,	13,500,000	*1,500,000	-	15,000,000
Consolidated Rubber Tire Co., . . .	5,000,000	*5,000,000	-	10,000,000
Continental Automobile Co.,	4,500,000	*3,500,000	-	8,000,000
Continental Cement Co.,	10,000,000	-	-	10,000,000
Continental Cotton Oil Co.,	3,000,000	*3,000,000	-	6,000,000
Continental Paper Bag Co.,	5,000,000	-	-	5,000,000
Cotton Oil & Fibre Co.,	1,500,000	*1,500,000	-	3,000,000
Distilling Co. of America,	70,000,000	*55,000,000	-	125,000,000
Dominion Iron & Steel Co.,	15,000,000	-	8,000,000	23,000,000
Edison Portland Cement Co.,	9,000,000	*2,000,000	-	11,000,000
Empire Steel & Iron Co.,	2,500,000	*2,500,000	-	\$5,000,000
Erie Brewing Co.,	1,000,000	*500,000	-	1,500,000
General Aristo Co.,	2,500,000	*2,500,000	-	5,000,000
General Carriage Co.,	20,000,000	-	-	20,000,000
General Chemical Co.,	12,500,000	*12,500,000	-	25,000,000
Great Northern Paper Co.,	4,000,000	-	-	4,000,000
International Automobile & Vehicle Tire Co.,	1,500,000	†1,500,000	-	3,000,000
International Car Wheel Co.,	10,000,000	*5,000,000	-	15,000,000
International Steam Pump Co., . . .	15,000,000	*12,500,000	-	27,500,000
Iowa Portland Cement Co.,	2,500,000	*1,000,000	-	3,500,000

* Cumulative. † Non-cumulative. ‡ Now (1900) issuing \$1,250,000 of bonds.

§ Authority given Jan. 1900, to increase total capital to \$10,000,000.

NAMES OF COMPANIES.	AUTHORIZED CAPITAL			
	Common Stock	Preferred Stock	Bonds	Total
Manufactured Rubber Co., . . .	\$5,000,000	*\$1,000,000	-	\$6,000,000
Maryland Brewing Co., . . .	3,250,000	3,250,000	\$7,500,000	14,000,000
Mt. Vernon-Woodberry Co., . .	9,500,000	-	14,000,000	23,500,000
National Carbon Co., . . .	5,500,000	†4,500,000	-	10,000,000
National Enameling & Stamping Co.,	20,000,000	*10,000,000	-	30,000,000
National Salt Co., . . .	7,000,000	†5,000,000	-	12,000,000
National Steel Co., . . .	32,000,000	*27,000,000	-	59,000,000
Nat'l Tin Plate & Stamping Ware Co.,	10,000,000	*10,000,000	-	20,000,000
National Tube Co., . . .	40,000,000	*40,000,000	-	80,000,000
New England Cotton Yarn Co., .	5,000,000	*6,500,000	6,500,000	18,000,000
Pacific Coast Biscuit Co., . . .	2,500,000	*1,500,000	1,500,000	5,500,000
Paterson Brewing & Malting Co., .	3,000,000	-	3,000,000	6,000,000
People's Brewing Co., . . .	1,100,000	1,100,000	1,500,000	3,700,000
Pittsburgh Brewing Co., . . .	6,500,000	6,500,000	6,500,000	19,500,000
Rochester Optical & Camera Co., .	3,500,000	*1,750,000	-	5,250,000
Rubber Goods Manufacturing Co., .	25,000,000	*25,000,000	-	50,000,000
Rubber Tire Co. of America, . .	5,000,000	-	-	5,000,000
Ruby Match Co., . . .	6,000,000	†1,000,000	-	7,000,000
Sloss-Sheffield Steel & Iron Co., .	10,000,000	†10,000,000	-	20,000,000
Springfield Breweries Co., . . .	1,150,000	*1,150,000	1,150,000	3,450,000
Standard Shoe Machinery Co., . .	3,000,000	*2,000,000	-	5,000,000
Union Bag & Paper Co., . . .	16,000,000	*11,000,000	-	27,000,000
Union Brick Co. of New England, .	2,000,000	1,500,000	1,750,000	5,250,000
Union Steel & Chain Co., . . .	30,000,000	†30,000,000	-	60,000,000
United Shoe Machinery Co., . . .	12,500,000	*12,500,000	-	25,000,000
United Starch Co., . . .	3,500,000	*2,500,000	-	6,000,000
U. S. Bobbin & Shuttle Co., . . .	1,200,000	*800,000	300,000	2,300,000
U. S. Cast Iron Pipe & Foundry Co.,	15,000,000	†15,000,000	-	30,000,000
U. S. Flour Milling Co., . . .	12,500,000	*12,500,000	15,000,000	40,000,000
United States Glucose Co., . . .	2,000,000	*3,000,000	-	5,000,000
TOTALS, . . .	\$950,530,000	\$647,450,000	\$147,200,000	\$1,745,180,000

* Cumulative.

† Non-cumulative.

PART II.

STATISTICS OF MANUFACTURES.
1898, 1899.

INTRODUCTION.

ESTABLISHMENTS AND THEIR MAN-
AGEMENT.

INVESTMENT, MATERIALS USED,
AND PRODUCT.

LABOR AND ITS COMPENSATION.

WORKING TIME AND PROPORTION OF
BUSINESS DONE.

GENERAL SUMMARY OF INDUSTRIAL
CONDITIONS.

PART II.

STATISTICS OF MANUFACTURES. 1898, 1899.

Introduction.

By the Act authorizing the collection of annual reports from manufacturers of the Commonwealth, it was provided that statistical abstracts should be prepared and published. During the past 13 years a report has been issued annually under this Act and the scope of the returns has been enlarged and improved with each succeeding volume.

The statistical presentations contained in this Part have been prepared from the returns made by 4,740 identical establishments covering each of the years 1898 and 1899. It is not intended to include all the establishments engaged in the mechanical and manufacturing industries of the Commonwealth and the somewhat restricted character of the returns has frequently been pointed out in order that unwarranted deductions regarding them might not be made.

The presentations are arranged in five sections. The first relates to the number of establishments considered, the number of private firms, corporations, and industrial combinations, with the partners and stockholders interested in the management of the establishments separated as to males, females, estates, banks, trustees, etc. The second covers the amount of capital invested, the value of stock or materials used, and the value of goods made and work done. The third, the number of persons employed (average, smallest, and greatest), the range of employment and unemployment for certain industries by months, the total amount paid out in wages, the average amount earned annually by each employé without regard to

sex or age, and the classified weekly earnings for certain industries. The fourth relates to the average number of days in operation and the average proportion of business done, and the fifth to a general summary of industrial conditions in the Commonwealth, based upon the returns made by the 4,740 identical establishments.

The term "All Industries" used in these reports for aggregates, refers only to the numerical totals of the various columns in the several presentations and not to the *total* investment, production, persons employed, wages paid, etc., of all the establishments engaged in the manufacturing and mechanical industries of the State. Such totals are only presented in the Decennial Census Reports, and in such special reports as "The Textile Industries" contained in the volume on Annual Statistics of Manufactures for 1898, and similar reports which will be presented in subsequent volumes of this series.

Therefore, whenever All Industries are mentioned in this Report, it is to be understood that the 88 classified industries shown in the table on pages 78 to 81 are referred to; and whenever numerical aggregates are presented for All Industries, or for any single industry, whether of capital invested, goods made, wages paid, etc., only such aggregates are intended as are derived from the 4,740 establishments, each of which made returns for each of the years 1898 and 1899, and for which it is possible to make comparisons, unless some other meaning is distinctly stated in the text.

The purpose of these reports is to show industrial conditions, to exhibit the trend of industrial progress, to note industrial changes as they occur, and, in connection with similar reports previously issued or to be hereafter prepared in the series of which this volume forms a part, to supplement the results obtained in the Census at periods widely apart, by data obtained annually from representative establishments covering a large percentage of the annual output of the State.

Establishments and their Management.

Whenever the word “establishment” is used in this Part it is to be understood as meaning the factory, mill, or shop from which a report has been secured, and not the firm or corporation controlling said factory, mill, or shop.

The following table exhibits the number of returns compared in each year since the first publication of these annual reports :

YEARS.	Number of Establish- ments Considered	YEARS.	Number of Establish- ments Considered
1886, 1887,	1,027	1894,	4,093
1888,	1,140	1895,	3,629
1889,	1,364	1896,	4,609
1890,	3,041	1897,	4,695
1891,	3,745	1898,	4,701
1892,	4,473	1899,	4,740
1893,	4,397		

The presentations which are given on the following pages show the number of establishments considered, the number of private firms, the number of partners, the number of industrial combinations, the number of corporations, and the number of stockholders. Attention is called to the head-notes on pages 78, 79, 82, and 83. It is there stated that duplications are to be found in the columns devoted to private firms, corporations, and combinations, and that these duplications are caused by the fact that the same firm or corporation is often engaged in conducting one or more establishments in different towns or in different industries; that the plan adopted has been to consider each establishment, whether managed in connection with another or not, as a unit, and to credit to each industry the full number of partners and stockholders, but, when considering the total for All Industries to deduct the duplications.

PRIVATE FIRMS AND CORPORATIONS; PARTNERS AND STOCKHOLDERS: BY INDUSTRIES.

1898.

[This presentation shows the number of partners and stockholders engaged in the manage-
The partners are divided into males, females, special, and estates. The stockholders are design-
aggregates of partners and stockholders are given. There are duplications in the columns
These duplications are indicated by an asterisk (*) following the title of the industry (see
engaged in manufacturing in two or more establishments located in the same town; sometimes in
or in different towns. The plan adopted has been to consider each establishment as one (whether
stockholders to each industry, but, in making up the total for "All Industries," to omit the
panies, or by industrial combinations, many of which have extensive investments of capital
holders of a railroad company, or of an industrial combination, in connection with such merely
abnormally increasing the aggregate.]

	INDUSTRIES.	Number of Estab- lishments Considered	Number of Private Firms	PARTNERS	
				Males	Females
1	Agricultural implements,	9	4	5	-
2	Arms and ammunition,	13	8	11	1
3	Artisans' tools,	75	57	79	1
4	Awnings, sails, tents, etc.,	44	44	57	2
5	Bicycles, tricycles, etc.,	21	6	8	-
6	Boots and shoes,*	683	616	985	19
7	Boots and shoes (factory product),*	450	390	662	13
8	Soles, heels, and cut stock,	200	190	273	5
9	Boot and shoe findings,	23	21	32	-
10	Stitching, heeling, etc.,	15	15	18	1
11	Boxes, barrels, kegs, etc.,*	119	107	151	4
12	Boxes (paper),	63	54	74	3
13	Brick, tiles, and sewer pipe,*	67	57	85	4
14	Brooms, brushes, and mops,	22	18	24	-
15	Building materials,	50	38	57	1
16	Burial cases, caskets, coffins, etc.,*	6	5	10	-
17	Buttons and dress trimmings,	15	6	10	1
18	Carpetings,*	12	4	6	-
19	Textile,*	8	2	3	-
20	Other,	4	2	3	-
21	Carriages and wagons,*	128	117	174	-
22	Cement, kaolin, lime, and plaster,	9	7	13	-
23	Chemical preparations (compounded),	12	8	10	4
24	Clocks and watches,	11	9	16	-
25	Clothing,	146	122	220	3
26	Cooking, lighting, and heating apparatus,*	42	21	25	1
27	Cordage and twine,	21	12	17	1
28	Cotton goods,*	153	28	40	7
29	Cotton goods (woven),*	115	14	19	5
30	Cotton yarn and thread,*	35	9	13	2
31	Cotton waste,*	8	5	8	-
32	Crayons, pencils, crucibles, etc.,	3	2	2	-
33	Drugs and medicines,	24	16	20	1
34	Dyestuffs,	6	4	7	-
35	Earthen, plaster, and stone ware,	10	9	10	-
36	Electrical apparatus and appliances,	20	7	11	2
37	Electroplating,*	12	12	15	-
38	Emery and sand paper and cloth, etc.,	9	2	2	-
39	Fancy articles, etc.,	16	12	15	-
40	Fertilizers,	6	4	5	-

PRIVATE FIRMS AND CORPORATIONS; PARTNERS AND STOCKHOLDERS: BY INDUSTRIES.

1898.

ment of the 4,740 establishments which enter into the comparison for the years 1898 and 1899. nated as males, females, and banks, trustees, etc.; while in the last column of the presentation devoted to private firms, partners, industrial combinations, corporations, and stockholders. Boots and Shoes). They are caused by the fact that the same firm or corporation is often the same industry in different towns; and sometimes in more than one industry in the same town managed in connection with another or not), and to credit the whole number of partners and duplications. Stockholders of certain establishments which are operated by railroad com- outside this Commonwealth, are not included in the presentation; since to include all the stock branch establishments, incidental only to the main business of the corporation, would result in

PARTNERS			Number of Com- binations	Number of Corpora- tions	STOCKHOLDERS				AGGREGATES:	
Special	Estates	Totals			Males	Females	Banks, Trustees, etc.	Totals	Partners and Stockholders	
-	-	5	-	5	45	24	13	82	87	1
-	1	13	-	5	93	44	7	144	157	2
-	2	82	-	18	466	289	100	855	937	3
-	1	60	-	-	-	-	-	-	60	4
-	-	8	-	15	232	53	17	302	310	5
9	6	1,019	-	72	671	157	30	858	1,877	6
8	3	686	-	60	474	53	11	538	1,224	7
1	3	282	-	10	190	103	19	312	594	8
-	-	32	-	2	7	1	-	8	40	9
-	-	19	-	-	-	-	-	-	19	10
-	1	156	-	12	61	9	15	85	241	11
1	1	79	-	9	51	6	1	58	137	12
-	3	92	-	10	125	77	32	234	326	13
-	1	25	-	4	27	22	5	54	79	14
-	-	58	-	12	109	20	2	131	189	15
-	-	10	-	1	25	10	8	43	53	16
-	-	11	-	9	68	18	8	94	105	17
-	-	6	-	8	421	379	178	978	984	18
-	-	3	-	6	397	353	170	920	923	19
-	-	3	-	2	24	26	8	58	61	20
1	5	180	-	11	54	18	6	78	258	21
-	-	13	-	2	9	-	-	9	22	22
-	-	14	-	4	37	14	5	56	70	23
-	-	16	-	2	232	196	45	473	489	24
2	1	226	-	24	383	160	26	569	795	25
1	1	28	-	21	183	67	10	260	288	26
2	1	21	-	9	327	232	17	576	597	27
-	4	51	-	130	9,984	8,431	3,265	21,680	21,731	28
-	2	26	-	101	8,641	7,643	2,834	19,168	19,194	29
-	2	17	-	26	1,328	787	380	2,495	2,512	30
-	-	8	-	3	15	1	1	17	25	31
-	-	2	-	1	10	2	-	12	14	32
-	2	23	-	8	70	35	3	108	131	33
-	-	7	-	2	40	10	5	55	62	34
-	-	10	-	1	10	-	-	10	20	35
-	-	13	-	13	358	80	20	458	471	36
-	-	15	-	-	-	-	-	-	15	37
-	-	2	-	7	80	28	6	114	116	38
-	-	15	-	4	30	7	-	37	52	39
-	-	5	-	2	19	2	1	22	27	40

PRIVATE FIRMS AND CORPORATIONS; PARTNERS AND STOCK-
HOLDERS — 1898 — Concluded.

	INDUSTRIES.	Number of Estab- lishments Considered	Number of Private Firms	PARTNERS	
				Males	Females
1	Fine arts and taxidermy,	3	2	3	-
2	Fireworks and matches,*	4	2	4	-
3	Flax, hemp, and jute goods,	8	2	4	-
4	Food preparations,*	356	301	390	13
5	Furniture,*	131	109	167	9
6	Glass,	14	12	19	1
7	Glue, isinglass, and starch,	19	12	22	1
8	Hair work (animal and human),	4	4	3	1
9	Hose: rubber, linen, etc.,	6	4	5	-
10	Hosiery and knit goods,	38	20	29	2
11	Ink, mucilage, and paste,	7	6	8	-
12	Ivory, bone, shell, and horn goods, etc.,	21	20	30	-
13	Jewelry,	90	81	148	9
14	Leather,*	96	83	139	1
15	Leather goods,*	26	13	29	-
16	Liquors (bottled) and carbonated beverages,	33	27	42	5
17	Liquors (malt),*	34	5	9	5
18	Liquors (distilled),	5	5	9	-
19	Lumber,*	25	21	27	1
20	Machines and machinery,*	353	234	347	11
21	Metals and metallic goods,*	393	278	386	10
22	Models, lasts, and patterns,*	47	44	70	2
23	Musical instruments and materials,	55	33	50	2
24	Oils and illuminating fluids,	10	8	12	-
25	Paints, colors, and crude chemicals,*	28	19	36	-
26	Paper,*	80	20	42	-
27	Paper goods,*	41	18	26	1
28	Perfumes, toilet articles, etc.,	6	5	5	-
29	Photographs and photographic materials,	21	18	22	1
30	Polishes and dressing,	31	25	41	-
31	Printing, publishing, and bookbinding,	62	39	68	3
32	Print works, dye works, and bleacheries,*	49	28	35	3
33	Railroad construction and equipment,*	16	4	5	-
34	Rubber and elastic goods,*	46	20	36	1
35	Saddlery and harness,	32	30	35	-
36	Scientific instruments and appliances,	22	16	23	-
37	Shipbuilding,	49	44	59	-
38	Silk and silk goods,	11	4	6	-
39	Sporting and athletic goods,	7	4	5	-
40	Stone,*	196	177	253	8
41	Quarried,*	45	32	45	2
42	Cut and monumental,*	151	145	208	6
43	Straw and palm leaf goods,	17	14	32	-
44	Tallow, candles, soap, and grease,	61	52	73	-
45	Tobacco, snuff, and cigars,	73	63	88	3
46	Toys and games (children's),	12	9	16	2
47	Trunks and valises,	7	7	10	-
48	Whips, lashes, and stocks,	11	6	8	2
49	Wooden goods,*	70	56	75	1
50	Woollen goods,*	138	86	130	5
51	Woven goods and yarn,*	119	70	114	4
52	Shoddy, waste, etc.,	19	16	16	1
53	Worsted goods,*	34	15	29	1
54	ALL INDUSTRIES,	4,740	3,510	5,248	157

PRIVATE FIRMS AND CORPORATIONS; PARTNERS AND STOCK-
HOLDERS — 1898 — Concluded.

PARTNERS			Number of Com- binations	Number of Corporations	STOCKHOLDERS				AGGREGATES: Partners and Stockholders	
Special	Estates	Totals			Males	Females	Banks, Trustees, etc.	Totals		
-	-	3	-	1	7	1	-	8	11	1
-	-	4	1	1	4	-	-	4	8	2
-	-	4	-	6	50	33	10	93	97	3
-	8	411	10	45	776	181	39	996	1,407	4
1	3	180	-	22	561	161	52	774	954	5
-	-	20	-	2	35	10	1	46	66	6
-	-	23	-	7	182	32	12	226	249	7
-	-	4	-	-	-	-	-	-	4	8
-	-	5	-	2	99	57	6	162	167	9
1	-	32	-	18	405	287	193	885	917	10
-	-	8	-	1	4	-	-	4	12	11
-	1	31	-	1	8	-	-	8	39	12
2	-	159	-	9	32	5	-	37	196	13
3	-	143	-	13	57	4	-	61	204	14
3	-	32	-	8	167	68	12	247	279	15
-	-	47	-	6	59	12	6	77	124	16
-	-	14	4	25	1,192	121	8	1,321	1,353	17
-	-	9	-	-	-	-	-	-	9	18
-	3	31	-	4	98	52	9	159	190	19
-	8	366	4	120	2,539	1,247	323	4,109	4,475	20
3	7	406	1	114	1,275	570	186	2,031	2,437	21
-	-	72	-	3	25	25	-	50	122	22
-	-	52	-	22	198	76	22	296	348	23
1	-	13	-	2	10	3	2	15	25	24
-	-	36	-	9	70	22	3	95	131	25
-	2	44	3	57	748	401	118	1,267	1,311	26
-	-	27	6	17	359	152	16	527	554	27
-	-	5	-	1	5	-	-	5	10	23
-	-	23	-	3	13	6	-	19	42	29
-	1	42	-	6	37	8	1	46	88	30
-	3	74	-	23	246	36	8	290	364	31
-	1	39	-	21	630	499	439	1,568	1,607	32
-	-	5	-	†12	90	9	5	104	109	33
-	2	39	-	26	490	365	85	940	979	34
-	-	35	-	2	14	7	-	21	56	35
-	-	23	-	6	76	16	1	93	116	36
-	1	60	-	5	113	20	8	141	201	37
-	-	6	-	7	123	51	13	187	193	38
-	-	5	-	3	12	-	1	13	18	39
-	4	265	-	19	314	143	26	483	748	40
-	2	49	-	13	256	139	26	421	470	41
-	2	216	-	6	58	4	-	62	278	42
1	-	33	-	3	13	5	2	20	53	43
1	-	74	-	9	88	48	29	165	239	44
1	-	92	-	10	53	7	1	61	153	45
-	-	18	-	3	23	-	-	23	41	46
-	-	10	-	-	-	-	-	-	10	47
-	-	10	-	5	148	65	13	226	236	48
-	2	78	1	13	184	60	9	253	331	49
1	2	138	2	50	668	624	323	1,615	1,753	50
1	2	121	2	47	656	623	323	1,602	1,723	51
-	-	17	-	3	12	1	-	13	30	52
-	-	30	-	19	391	182	122	695	725	53
33	76	5,514	14	†1,155	25,689	15,173	5,490	46,352	51,866	54

† Includes 9 railroad corporations.

† Includes 3 railroad corporations.

PRIVATE FIRMS AND CORPORATIONS; PARTNERS AND STOCKHOLDERS: BY INDUSTRIES.

1899.

[This presentation shows the number of partners and stockholders engaged in the manage-
The partners are divided into males, females, special, and estates. The stockholders are design-
aggregates of partners and stockholders are given. There are duplications in the columns
These duplications are indicated by an asterisk (*) following the title of the industry (see
engaged in manufacturing in two or more establishments located in the same town; sometimes in
or in different towns. The plan adopted has been to consider each establishment as one (whether
stockholders to each industry, but, in making up the total for "All Industries," to omit the
panies, or by industrial combinations, many of which have extensive investments of capital out-
holders of a railroad company, or of an industrial combination, in connection with such merely
abnormally increasing the aggregate.]

	INDUSTRIES.	Number of Estab- lishments Considered	Number of Private Firms	PARTNERS	
				Males	Females
1	Agricultural implements,	9	4	5	-
2	Arms and ammunition,	13	7	10	1
3	Artisans' tools,	75	56	79	1
4	Awnings, sails, tents, etc.,	44	44	54	2
5	Bicycles, tricycles, etc.,*	21	7	9	-
6	Boots and shoes,*	688	605	956	23
7	Boots and shoes (factory product),*	450	383	646	11
8	Soles, heels, and cut stock,	200	187	260	6
9	Boot and shoe findings,	23	20	30	6
10	Stitching, heeling, etc.,	15	15	20	-
11	Boxes, barrels, kegs, etc.,*	119	105	145	3
12	Boxes (paper),	63	53	69	6
13	Brick, tiles, and sewer pipe,*	67	54	80	8
14	Brooms, brushes, and mops,	22	18	24	-
15	Building materials,	50	37	55	1
16	Burial cases, caskets, coffins, etc.,*	6	5	10	-
17	Buttons and dress trimmings,	15	6	8	1
18	Carpetings,*	12	4	6	-
19	Textile,*	8	2	3	-
20	Other,	4	2	3	-
21	Carriages and wagons,*	128	115	173	-
22	Cement, kaolin, lime, and plaster,	9	7	12	-
23	Chemical preparations (compounded),	12	6	8	1
24	Clocks and watches,	11	9	15	-
25	Clothing,	146	119	210	2
26	Cooking, lighting, and heating apparatus,	42	21	28	1
27	Cordage and twine,	21	12	18	1
28	Cotton goods,*	158	28	45	8
29	Cotton goods (woven),*	115	14	24	7
30	Cotton yarn and thread,*	35	9	13	1
31	Cotton waste,*	8	5	8	-
32	Crayons, pencils, crucibles, etc.,	3	2	2	-
33	Drugs and medicines,	24	15	17	-
34	Dyestuffs,	6	4	7	-
35	Earthen, plaster, and stone ware,	10	9	9	-
36	Electrical apparatus and appliances,	20	7	8	-
37	Electroplating,*	12	12	15	-
38	Emery and sand paper and cloth, etc.,	9	2	2	-
39	Fancy articles, etc.,	16	12	17	-
40	Fertilizers,	6	4	5	-

PRIVATE FIRMS AND CORPORATIONS; PARTNERS AND STOCKHOLDERS: BY INDUSTRIES.

1899.

ment of the 4,740 establishments which enter into the comparison for the years 1898 and 1899, nated as males, females, and banks, trustees, etc.; while in the last column of the presentation devoted to private firms, partners, industrial combinations, corporations, and stockholders. Boots and Shoes). They are caused by the fact that the same firm or corporation is often the same industry in different towns; and sometimes in more than one industry in the same town managed in connection with another or not), and to credit the whole number of partners and duplications. Stockholders of certain establishments which are operated by railroad com- side this Commonwealth, are not included in the presentation; since to include all the stock- branch establishments, incidental only to the main business of the corporation, would result in

PARTNERS			Number of Com- binations	Number of Corpora- tions	STOCKHOLDERS				AGGREGATES: Partners and Stockholders	
Special	Estates	Totals			Males	Females	Banks, Trustees, etc.	Totals		
-	-	5	-	5	36	16	24	76	81	1
-	1	12	-	6	109	51	19	179	191	2
-	-	80	1	18	462	299	100	861	941	3
-	2	58	-	-	-	-	-	-	58	4
-	-	9	1	13	144	47	16	207	216	5
11	7	997	-	83	755	169	40	964	1,961	6
10	4	671	-	67	533	60	22	615	1,286	7
1	3	270	-	13	209	107	18	334	604	8
-	-	36	-	3	13	2	-	15	51	9
-	-	20	-	-	-	-	-	-	20	10
2	2	152	-	14	79	13	14	106	258	11
1	-	76	-	10	55	5	2	62	138	12
-	1	89	-	13	148	80	31	259	348	13
-	1	25	-	4	28	23	1	52	77	14
-	-	56	-	13	153	24	4	181	237	15
-	-	10	-	1	25	10	8	43	53	16
-	-	9	-	9	71	21	2	94	103	17
-	-	6	-	8	412	387	176	975	981	18
-	-	3	-	6	387	359	171	917	920	19
-	-	3	-	2	25	23	5	58	61	20
-	5	178	-	13	61	21	4	86	264	21
-	1	13	-	2	9	-	-	9	22	22
-	-	9	-	6	55	30	9	94	103	23
-	-	15	-	2	191	175	37	403	418	24
2	2	216	-	27	406	152	24	582	798	25
-	1	30	-	21	191	67	9	267	297	26
2	1	22	-	9	320	254	18	592	614	27
-	3	56	8	122	9,261	7,955	3,060	20,276	20,332	28
-	1	32	-	101	8,732	7,651	2,971	19,354	19,386	29
-	2	16	8	18	512	300	88	900	916	30
-	-	8	-	3	17	4	1	22	30	31
-	-	2	-	1	11	2	-	13	15	32
-	3	20	-	9	78	41	3	122	142	33
-	-	7	-	2	38	12	5	55	62	34
-	-	9	-	1	9	-	-	9	19	35
-	-	8	-	13	256	57	17	330	338	36
-	-	15	-	-	-	-	-	-	15	37
-	-	2	-	7	81	28	6	115	117	38
-	-	17	-	4	28	8	-	36	53	39
-	-	5	-	2	24	5	3	32	37	40

PRIVATE FIRMS AND CORPORATIONS; PARTNERS AND STOCK-
HOLDERS — 1899 — Concluded.

	INDUSTRIES.	Number of Estab- lishments Considered	Number of Private Firms	PARTNERS	
				Males	Females
1	Fine arts and taxidermy,	3	2	3	-
2	Fireworks and matches,*	4	2	4	-
3	Flax, hemp, and jute goods,	8	3	5	-
4	Food preparations,*	356	298	382	8
5	Furniture,*	131	107	167	9
6	Glass,	14	12	19	1
7	Glue, isinglass, and starch,	19	12	22	1
8	Hair work (animal and human),	4	4	3	1
9	Hose: rubber, linen, etc.,	6	4	5	-
10	Hosiery and knit goods,	38	20	29	2
11	Ink, mucilage, and paste,	7	6	8	-
12	Ivory, bone, shell, and horn goods,	21	19	29	-
13	Jewelry,	90	77	142	9
14	Leather,*	96	76	123	1
15	Leather goods,*	26	18	28	-
16	Liquors (bottled) and carbonated beverages,	33	26	35	5
17	Liquors (malt),*	34	5	9	5
18	Liquors (distilled),	5	5	8	-
19	Lumber,*	25	21	27	1
20	Machines and machinery,*	358	224	322	9
21	Metals and metallic goods,*	393	276	384	11
22	Models, lasts, and patterns,*	47	43	70	1
23	Musical instruments and materials,	55	32	48	1
24	Oils and illuminating fluids,	10	8	12	-
25	Paints, colors, and crude chemicals,*	28	19	34	-
26	Paper,*	80	20	39	-
27	Paper goods,*	41	18	27	-
28	Perfumes, toilet articles, etc.,	6	5	5	-
29	Photographs and photographic materials,	21	18	21	1
30	Polishes and dressing,	31	25	44	1
31	Printing, publishing, and bookbinding,	62	39	68	3
32	Print works, dye works, and bleacheries,*	49	27	34	4
33	Railroad construction and equipment,*	16	3	3	-
34	Rubber and elastic goods,*	46	20	36	1
35	Saddlery and harness,	32	30	37	-
36	Scientific instruments and appliances,	22	16	23	-
37	Shipbuilding,	49	44	60	-
38	Silk and silk goods,	11	4	6	-
39	Sporting and athletic goods,	7	4	4	-
40	Stone,*	196	177	243	8
41	Quarried,*	45	32	43	2
42	Cut and monumental,*	151	145	200	6
43	Straw and palm leaf goods,	17	14	29	-
44	Tallow, candles, soap, and grease,	61	53	72	-
45	Tobacco, snuff, and cigars,	73	64	90	3
46	Toys and games (children's),	12	7	12	2
47	Trunks and valises,	7	7	10	-
48	Whips, lashes, and stocks,	11	6	8	2
49	Wooden goods,*	70	56	72	1
50	Woollen goods,*	138	81	119	5
51	Woven goods and yarn,*	119	65	102	4
52	Shoddy, waste, etc.,	19	16	17	1
53	Worsted goods,*	34	15	29	1
54	ALL INDUSTRIES,	4,740	3,445	5,084	154

PRIVATE FIRMS AND CORPORATIONS; PARTNERS AND STOCK-
HOLDERS — 1899 — Concluded.

PARTNERS			Number of Com- binations	Number of Corporations	STOCKHOLDERS				AGGREGATES:	
Special	Estates	Totals			Males	Females	Banks, Trustees, etc.	Totals	Partners and Stockholders	
-	-	3	-	1	7	1	-	8	11	1
-	-	4	1	1	4	1	-	5	9	2
-	-	5	-	5	59	40	9	108	113	3
-	10	400	10	48	822	208	51	1,081	1,481	4
1	2	179	-	24	710	164	53	927	1,106	5
-	-	20	-	2	27	9	5	41	61	6
-	-	23	-	7	178	39	13	230	253	7
-	-	4	-	-	-	-	-	-	4	8
-	-	5	-	2	104	21	14	139	144	9
1	-	32	-	18	411	301	195	907	939	10
-	-	8	-	1	4	-	-	4	12	11
-	-	29	-	2	8	1	-	9	38	12
2	-	153	-	13	57	7	-	64	217	13
2	-	126	10	10	40	5	-	45	171	14
4	-	32	-	8	157	79	9	245	277	15
-	1	41	-	7	64	15	6	85	126	16
-	-	14	4	25	1,358	144	28	1,530	1,544	17
-	3	11	-	-	-	-	-	-	11	18
-	2	30	-	4	79	41	2	122	152	19
-	6	337	8	126	2,172	1,049	306	3,527	3,864	20
3	7	405	1	116	1,246	619	187	2,052	2,457	21
-	-	71	-	4	19	6	1	26	97	22
-	-	49	-	23	215	80	23	318	367	23
-	-	12	-	2	10	3	2	15	27	24
-	-	34	1	8	58	22	10	90	124	25
-	2	41	23	37	359	166	46	571	612	26
-	-	27	7	16	333	159	23	615	542	27
-	-	5	-	1	5	-	-	5	10	28
-	-	22	-	3	14	6	-	20	42	29
-	1	46	-	6	38	8	2	48	94	30
-	1	72	-	23	251	40	8	299	371	31
-	1	39	-	22	610	509	436	1,555	1,594	32
-	-	3	-	†13	94	9	5	108	111	33
-	2	39	2	24	469	345	80	894	933	34
-	-	37	-	2	14	7	-	21	58	35
-	-	23	-	6	74	17	12	103	126	36
-	3	63	-	5	111	19	9	139	202	37
-	-	6	-	7	113	45	10	168	174	38
-	-	4	-	3	12	-	1	13	17	39
-	6	257	-	19	312	141	28	481	738	40
-	3	48	-	13	255	137	28	420	468	41
-	3	209	-	6	57	4	-	61	270	42
1	-	30	-	3	15	5	2	22	52	43
-	3	75	-	8	64	28	13	105	180	44
1	-	94	-	9	48	7	5	60	154	45
-	-	14	-	5	28	4	-	32	46	46
-	-	10	-	-	-	-	-	-	10	47
-	-	10	-	5	145	67	11	223	233	48
-	2	75	1	13	174	57	22	253	328	49
-	2	126	10	47	664	523	267	1,454	1,550	50
-	2	108	10	44	653	522	267	1,442	1,550	51
-	-	18	-	3	11	1	-	12	30	52
-	-	30	3	16	306	169	117	592	622	53
32	82	5,352	23	†1,157	24,279	14,334	5,206	43,819	49,171	54

† Includes 9 railroad corporations.

‡ Includes 3 railroad corporations.

Analysis.

By reference to the final line in each of the preceding presentations it will be seen that the total number of establishments considered is 4,740. In 1898 they were controlled by 3,510 private firms, 1,155 corporations, and 14 industrial combinations. In 1899, these same 4,740 establishments were controlled by 3,445 private firms, 1,157 corporations, and 23 industrial combinations. The changes brought about by business conditions during the two years are, perhaps, more forcibly seen in the following table :

CLASSIFICATION.	NUMBER		INCREASE (+) OR DECREASE (−) IN 1899	
	1898	1899	Number	Per-centages
Private firms,	3,510	3,445	−65	−1.85
Corporations,	1,155	1,157	+2	+0.17
Industrial combinations,	14	23	+9	+64.29
TOTALS,	4,679	4,625	−54	−1.15

Although there was a decrease in the number of private firms of 65, or 1.85 per cent, there was an increase of only two in the number of corporations, a gain of 0.17 per cent, while the industrial combinations show an increase of 64.29 per cent ; that is to say, the control of a large number of establishments, previously operated by private firms or corporations, had passed into the hands of combinations formed for the purpose of controlling product and prices and reducing the expenses of management. The industries affected by these changes are shown in the following table :

INDUSTRIES.	1898			1899		
	Private Firms	Corporations	Industrial Combinations	Private Firms	Corporations	Industrial Combinations
Artisans' tools,	57	18	—	56	18	1
Bicycles, tricycles, etc.,	6	15	—	7	13	1
Cotton yarn and thread,	9	26	—	9	18	8
Fireworks and matches,	2	1	1	2	1	1
Food preparations,	301	45	10	298	48	10
Leather,	83	13	—	76	10	10
Liquors (malt),	5	25	4	5	25	4

INDUSTRIES.	1898			1899		
	Private Firms	Corporations	Industrial Combinations	Private Firms	Corporations	Industrial Combinations
Machines and machinery, .	234	120	4	224	126	8
Metals and metallic goods, .	278	114	1	276	116	1
Paints, colors, and crude chemicals,	19	9	-	19	8	1
Paper,	20	57	3	20	37	23
Paper goods,	18	17	6	18	16	7
Rubber and elastic goods, .	20	26	-	20	24	2
Wooden goods,	56	13	1	56	13	1
Woollen goods (woven and yarn),	70	47	2	65	44	10
Worsted goods,	15	19	-	15	16	3
TOTALS,	1,193	565	32	1,166	533	91

The above table represents establishments. In 1899, one establishment in Artisans' Tools, managed by a private firm, was absorbed by an industrial combination. In Cotton Yarn and Thread, eight establishments controlled by as many separate corporations were absorbed by a single industrial combination. In Leather, seven establishments managed by private firms and three under corporate management in 1898 became parts of one combination in 1899. In Paper, 20 mills operated by as many corporations in 1898 were absorbed in 1899 by one industrial combination. Considering the total line we find that the change in control of establishments shows a loss in these industries of 27 private firms and 32 corporations. In these same industries there was an increase of 59 establishments passing into the control of industrial combinations, a gain in 1899 as against 1898 of 184.38 per cent.

Referring to the presentations, pages 78 to 85, it will be found when making a mathematical total of the number of private firms, corporations, and industrial combinations, that, in 1898, 3,526 establishments were under the management of private firms, 1,182 under the management of corporations, and 32 under the control of industrial combinations. In 1899 the private firms controlled 3,461 establishments, the corporations, 1,188 establishments, and the industrial combinations 91 establishments. In other words, in 1899, each private firm, on an average, controlled one establishment, each corporation, on an average, controlled 1.03 establishments, and

each industrial combination, on an average, controlled 3.96 establishments.

The head-notes to the presentations on pages 78, 79, 82 and 83 state that, "Stockholders of certain establishments which are operated by railroad companies, or by industrial combinations, many of which have extensive investments of capital outside this Commonwealth, are not included in the presentation; since to include all the stockholders of a railroad company, or of an industrial combination, in connection with such merely branch establishments, incidental only to the main business of the corporation, would result in abnormally increasing the aggregate." Excluding the stockholders of such establishments, therefore, we present in the following table the aggregates of partners and stockholders for the years 1898 and 1899 with the increase or decrease in the later year as compared with the earlier :

PARTNERS AND STOCKHOLDERS.	NUMBER		INCREASE (+) OR DECREASE (—) IN 1899	
	1898	1899	Number	Per- centages
<i>Partners.</i>	5,514	5,352	—162	—2.94
Males,	5,248	5,084	—164	—3.13
Females,	157	154	—3	—1.91
Special and estates,	109	114	+5	+4.59
<i>Stockholders.</i>	46,352	43,819	—2,533	—5.46
Males,	25,689	24,279	—1,410	—5.49
Females,	15,173	14,334	—839	—5.53
Banks, trustees, etc.,	5,490	5,206	—284	—5.17
<i>Aggregates.</i>	51,866	49,171	—2,695	—5.20
Males,	30,937	29,363	—1,574	—5.09
Females,	15,330	14,488	—842	—5.49
Special, banks, etc.,	5,599	5,320	—279	—4.98

Of the partners, the number of males declined from 5,248 in 1898 to 5,084 in 1899, a decrease of 164 persons, or 3.13 per cent. The number of female partners decreased 1.91 per cent, while the number of special partners and estates increased 4.59 per cent. The aggregate decrease in partners was 2.94 per cent. The relative proportions of the sexes remained practically the same in both years.

The total number of stockholders shows a decrease from 46,352 persons in 1898 to 43,819 persons in 1899, a falling off of 2,533 persons, or 5.46 per cent. The number of males

decreased 5.49 per cent, females 5.53 per cent, and banks, trustees, etc., 5.17 per cent. The proportions of the sexes were about the same in each year.

The number of partners and stockholders in the aggregate and in the average is shown by the following table :

CLASSIFICATION.	NUMBERS	
	1898	1899
Private firms,	3,510	3,445
Partners,	5,514	5,352
Average number of partners to a private firm,	1.57	1.55
Corporations,	1,155	1,157
Stockholders,	46,352	43,819
Average number of stockholders to a corporation,	40.13	37.87

While the number of private firms and the number of partners declined in 1899 as compared with 1898, there is no material variation in the average number of partners to a private firm. The average number of stockholders to a corporation was 40.13 in 1898 and 37.87 in 1899. This decrease is mainly due to the absorption of corporations by industrial combinations, the stockholders of which, as has been stated, are not here presented.

The returns relative to private firms, corporations, industrial combinations, partners, and stockholders for 1899 are condensed in the following summary : The returns represent 4,740 establishments found under 88 industry classifications. These establishments are conducted by 3,445 private firms, 1,157 corporations, and 23 industrial combinations. In other words, 74.49 per cent of the establishments are in the hands of private firms under the control of 5,352 persons of whom 94.99 per cent are males, 2.88 per cent females, and 2.13 per cent special partners and estates. Corporations and industrial combinations control 25.51 per cent of the establishments, and in the corporations 43,819 persons are financially interested ; of these 55.41 per cent are males, 32.71 per cent females, and 11.88 per cent banks, trustees, etc. The average number of partners to a private firm is 1.55 and the average number of stockholders to a corporation, 37.87.

Investment, Materials Used, and Product. .

On the following pages presentations appear which show, respectively, comparisons of the amount of capital invested, of the value of stock or materials used, and of the value of goods made and work done in 4,740 identical establishments each making returns for the years 1898 and 1899. The relative increase or decrease in 1899 as compared with 1898 is given in amounts and equivalent percentages.

The term "capital invested" as used in these reports does not mean merely cash capital or capital stock. It includes all legitimate forms of capital devoted to production. Not only does it include cash, value of land, buildings, machinery, implements, and tools, but also the value of stock on hand in a raw state or in process of manufacture. Obviously, the last named element is variable from year to year. A small amount of stock on hand or in process of manufacture at the time the report is made would have its effect in showing diminished capitalization, and, on the other hand, an investment in materials purchased in a favorable market, the same being on hand at the time of making the return, would increase relatively the amount of capital invested, and yet neither condition would affect the standing of the industry.

The term "stock used" includes all materials used in the establishment whether entering into the construction of the article, or consumed in the processes necessary to the production of the finished goods. Increase or decrease in value of stock used, considered by itself, does not always indicate gain or loss in the *quantity* consumed or a corresponding increase or decrease in the *quantity* of goods made, it often indicates simply a decline or rise in *values* and may have no appreciable effect on the quantity.

The term "goods made and work done" is sufficiently explicit. It includes the entire value of the output in the 4,740 establishments making return in the years 1898 and 1899.

CAPITAL INVESTED: BY INDUSTRIES.

1898, 1899.

[In this presentation, the figures given under "Amount of Capital Invested" represent the returns made by the same establishments, in each industry, for the years 1898 and 1899, the whole number of establishments considered in "All Industries" being 4,740. Comparison is made, as regards the amount of capital invested, between these two years. The relative increase or decrease in 1899 as compared with 1898 is given with its equivalent percentage.]

INDUSTRIES.	Number of Establishments Considered	AMOUNT OF CAPITAL INVESTED		INCREASE (+) OR DECREASE (—) IN 1899	
		1898	1899	Amounts	Percentages
Agricultural implements,	9	\$1,003,806	\$1,068,986	+\$65,180	+6.49
Arms and ammunition,	13	1,827,945	1,918,018	+90,073	+4.93
Artisans' tools,	75	2,657,781	2,747,934	+90,153	+3.39
Awnings, sails, tents, etc.,	44	149,102	177,391	+28,289	+18.97
Bicycles, tricycles, etc.,	21	2,971,200	2,767,900	—203,300	—6.84
Boots and shoes,	688	22,139,915	26,728,316	+4,588,401	+20.72
Boots and shoes (factory product),	450	19,282,601	22,894,188	+3,611,587	+18.72
Soles, heels, and cut stock,	200	2,467,575	3,350,289	+882,714	+35.77
Boot and shoe findings,	23	346,161	437,579	+91,418	+26.41
Stitching, heeling, etc.,	15	43,578	46,260	+2,682	+6.15
Boxes, barrels, kegs, etc.,	119	2,295,613	2,439,033	+143,420	+6.25
Boxes (paper),	63	980,361	1,066,987	+86,626	+8.84
Brick, tiles, and sewer pipe,	67	1,729,522	1,676,339	—53,183	—3.08
Brooms, brushes, and mops,	22	625,649	595,925	—30,624	—4.89
Building materials,	50	1,253,139	1,918,071	+664,932	+53.06
Burial cases, caskets, coffins, etc.,	6	174,797	179,221	+4,424	+2.53
Buttons and dress trimmings,	15	735,046	758,387	+23,341	+3.18
Carpetings,	12	6,582,652	6,630,869	+48,217	+0.73
Textile,	8	6,249,070	6,319,437	+70,367	+1.13
Other,	4	333,582	311,432	—22,150	—6.64
Carriages and wagons,	128	2,192,566	2,233,597	+41,031	+1.87
Cement, kaolin, lime, and plaster,	9	104,285	106,599	+2,314	+2.22
Chemical preparations (compound- ed),	12	858,340	784,611	—73,729	—8.59
Clocks and watches,	11	4,575,020	4,351,935	—223,085	—4.88
Clothing,	146	4,461,267	4,733,335	+272,068	+6.10
Cooking, lighting, and heating ap- paratus,	42	1,445,961	1,622,548	+176,587	+12.21
Cordage and twine,	21	2,432,885	2,713,171	+280,286	+11.52
Cotton goods,	158	111,805,794	126,159,262	+14,353,468	+12.84
Cotton goods (woven),	115	94,287,523	99,737,670	+5,450,147	+5.80
Cotton yarn and thread,	35	16,868,660	25,667,210	+8,798,550	+52.16
Cotton waste,	8	649,611	734,382	+84,771	+13.05
Crayons, pencils, crucibles, etc.,	3	53,830	91,144	+37,314	+69.32
Drugs and medicines,	24	993,266	1,199,810	+206,544	+20.79
Dyestuffs,	6	563,597	608,374	+44,777	+7.94
Earthen, plaster, and stone ware,	10	226,110	226,307	+197	+0.09
Electrical apparatus and appliances,	20	3,211,310	4,224,448	+1,013,138	+31.55
Electroplating,	12	87,210	97,236	+10,026	+11.50
Emery and sand paper and cloth, etc.,	9	554,299	581,401	+27,102	+4.90
Fancy articles, etc.,	16	163,455	206,948	+43,493	+26.61
Fertilizers,	6	744,670	701,345	—43,325	—5.82
Fine arts and taxidermy,	3	31,247	31,345	+98	+0.31
Fireworks and matches,	4	47,776	52,440	+4,664	+9.76
Flax, hemp, and jute goods,	8	1,778,361	1,725,936	—52,425	—2.95
Food preparations,	356	20,228,674	20,085,142	—143,532	—0.71
Furniture,	131	6,885,782	7,185,193	+299,551	+4.35
Glass,	14	138,490	150,366	+11,876	+8.58
Glue, isinglass, and starch,	19	1,042,418	1,062,547	+20,129	+1.93

CAPITAL INVESTED: BY INDUSTRIES—1898, 1899—Concluded.

INDUSTRIES.	Number of Estab- lishments Con- sidered	AMOUNT OF CAPITAL INVESTED		INCREASE (+) OR DECREASE (—) IN 1899	
		1898	1899	Amounts	Percent- ages
Hair work (animal and human), . . .	4	\$106,625	\$120,700	+\$14,075	+13.20
Hose: rubber, linen, etc., . . .	6	663,625	905,189	+241,544	+36.40
Hosiery and knit goods, . . .	38	3,884,918	4,116,459	+231,541	+5.96
Ink, mucilage, and paste, . . .	7	80,396	75,840	—4,556	—5.67
Ivory, bone, shell, and horn goods, etc., . . .	21	404,007	549,632	+145,625	+36.04
Jewelry, . . .	90	2,798,354	3,261,025	+462,671	+16.53
Leather, . . .	96	6,241,216	6,755,499	+514,283	+8.24
Leather goods, . . .	26	1,236,683	1,439,239	+202,556	+16.38
Liquors (bottled) and carbonated beverages, . . .	33	562,261	557,258	—5,003	—0.89
Liquors (malt), . . .	34	11,492,068	12,327,834	+835,766	+7.27
Liquors (distilled), . . .	5	327,791	340,237	+12,446	+3.80
Lumber, . . .	25	1,185,528	1,153,961	—31,567	—2.66
Machines and machinery, . . .	358	32,721,191	35,178,135	+2,456,944	+7.51
Metals and metallic goods, . . .	393	17,543,554	18,992,728	+1,449,174	+8.26
Models, lasts, and patterns, . . .	47	851,445	782,771	—68,674	—8.07
Musical instruments and materials, . . .	55	3,457,409	3,753,412	+296,003	+8.56
Oils and illuminating fluids, . . .	10	517,436	649,558	+132,122	+25.53
Paints, colors, and crude chemicals, Paper, . . .	28	713,244	751,356	+38,112	+5.34
Paper goods, . . .	80	19,655,162	20,663,683	+1,008,521	+5.13
Perfumes, toilet articles, etc., . . .	41	3,510,268	3,623,969	+113,701	+3.24
Photographs and photographic ma- terials, . . .	6	18,628	17,949	—679	—3.65
Polishes and dressing, . . .	21	198,483	243,163	+44,680	+22.51
Printing, publishing, and bookbind- ing, . . .	31	390,808	463,033	+72,225	+18.48
Print works, dye works, and bleach- eries, . . .	62	4,481,639	4,816,238	+334,599	+7.47
Railroad construction and equip- ment, . . .	49	12,733,135	13,078,838	+345,703	+2.71
Rubber and elastic goods, . . .	16	2,039,957	2,155,946	+115,989	+5.69
Saddlery and harness, . . .	46	10,866,142	12,008,419	+1,142,277	+10.51
Scientific instruments and appli- ances, . . .	32	271,030	322,158	+51,128	+18.86
Shipbuilding, . . .	22	1,237,224	1,329,139	+91,915	+7.43
Silk and silk goods, . . .	49	1,156,218	1,393,613	+237,395	+20.53
Sporting and athletic goods, . . .	11	2,091,304	2,371,381	+280,077	+13.39
Stone, . . .	7	173,318	182,047	+8,729	+50.36
Quarried, . . .	196	3,469,120	3,529,573	+60,453	+1.74
Cut and monumental, . . .	45	1,825,494	1,872,826	+47,332	+2.59
Straw and palm leaf goods, . . .	151	1,643,626	1,656,747	+13,121	+0.80
Tallow, candles, soap, and grease, . . .	17	1,997,113	1,937,334	—59,779	—2.99
Tobacco, snuff, and cigars, . . .	61	2,038,748	2,198,600	+159,852	+7.84
Toys and games (children's), . . .	73	1,366,552	1,092,670	—273,882	—20.04
Trunks and valises, . . .	12	370,208	405,720	+35,512	+9.59
Whips, lashes, and stocks, . . .	7	40,810	41,945	+1,135	+2.78
Woollen goods, . . .	11	423,529	467,482	+43,953	+10.38
Woollen goods, . . .	70	1,477,269	1,458,277	—18,992	—1.29
Woollen goods, . . .	138	26,227,676	28,416,883	+2,189,207	+8.35
Woven goods and yarn, . . .	119	25,477,359	27,634,968	+2,157,609	+8.47
Shoddy, waste, etc., . . .	19	750,317	781,915	+31,598	+4.21
Worsted goods, . . .	34	17,542,193	18,372,545	+830,352	+4.73
ALL INDUSTRIES, . . .	4,740	\$ 408,317,396	\$ 443,908,875	+35,591,479	+8.72

STOCK USED: BY INDUSTRIES.

1898, 1899.

[In this presentation, the figures given under "Value of Stock Used" represent the returns made by the same establishments in each industry, for the years 1898 and 1899, the whole number of establishments considered in "All Industries" being 4,740. Comparison is made, as regards value of stock used, between these two years. The relative increase or decrease in 1899 as compared with 1898 is given with its equivalent percentage.]

INDUSTRIES.	Number of Establishments Considered	VALUE OF STOCK USED		INCREASE (+) OR DECREASE (—) IN 1899	
		1898	1899	Amounts	Percentages
Agricultural implements,	9	\$358,543	\$508,881	+\$150,338	+41.93
Arms and ammunition,	13	525,455	919,866	+394,411	+75.06
Artisans' tools,	75	721,345	844,710	+123,365	+17.10
Awnings, sails, tents, etc.,	44	325,797	408,699	+82,902	+25.45
Bicycles, tricycles, etc.,	21	1,759,706	1,517,274	—242,432	—13.78
Boots and shoes,	688	67,017,570	78,182,005	+11,164,435	+16.66
Boots and shoes (factory product),	450	56,740,949	64,538,863	+7,797,914	+13.74
Soles, heels, and cut stock,	200	9,639,539	12,717,160	+3,077,621	+31.93
Boot and shoe findings,	23	611,432	894,323	+282,891	+46.27
Stitching, heeling, etc.,	15	25,650	31,659	+6,009	+23.43
Boxes, barrels, kegs, etc.,	119	2,140,497	2,487,434	+346,937	+16.21
Boxes (paper),	63	885,829	1,002,143	+116,314	+13.13
Brick, tiles, and sewer pipe,	67	375,008	399,884	+24,876	+6.63
Brooms, brushes, and mops,	22	786,245	904,047	+117,802	+14.98
Building materials,	50	1,114,370	1,225,576	+111,206	+9.98
Burial cases, caskets, coffins, etc.,	6	195,016	143,477	—51,539	—26.43
Buttons and dress trimmings,	15	336,662	402,770	+66,108	+19.64
Carpetings,	12	3,639,475	4,313,990	+674,515	+18.53
Textile,	8	3,200,843	3,760,775	+559,932	+17.49
Other,	4	438,632	553,215	+114,583	+26.12
Carriages and wagons,	128	1,512,459	1,674,081	+161,622	+10.69
Cement, kaolin, lime, and plaster,	9	96,452	94,886	—1,566	—1.62
Chemical preparations (compound- ed),	12	579,214	722,778	+143,564	+24.79
Clocks and watches,	11	376,616	442,972	+66,356	+17.62
Clothing,	146	9,130,438	10,186,386	+1,055,948	+11.57
Cooking, lighting, and heating ap- paratus,	42	676,108	971,048	+294,940	+43.62
Cordage and twine,	21	3,261,503	4,505,824	+1,244,321	+38.15
Cotton goods,	158	46,769,141	50,092,441	+3,323,300	+7.11
Cotton goods (woven),	115	37,931,663	41,939,993	+4,008,330	+10.57
Cotton yarn and thread,	35	7,344,177	6,643,600	—700,577	—9.54
Cotton waste,	8	1,493,301	1,508,848	+15,547	+1.04
Crayons, pencils, crucibles, etc.,	3	45,300	63,150	+17,850	+39.40
Drugs and medicines,	24	1,271,760	1,399,026	+127,266	+10.01
Dyestuffs,	6	321,620	340,008	+18,388	+5.72
Earthen, plaster, and stone ware,	10	62,252	71,753	+9,501	+15.26
Electrical apparatus and appliances,	20	2,971,957	4,396,723	+1,424,766	+47.94
Electroplating,	12	43,390	82,975	+39,585	+71.47
Emery and sand paper and cloth, etc.,	9	315,902	375,284	+59,382	+18.80
Fancy articles, etc.,	16	223,568	274,727	+51,159	+22.88
Fertilizers,	6	668,654	988,688	+320,034	+47.86
Fine arts and taxidermy,	3	4,597	5,604	+1,007	+21.91
Fireworks and matches,	4	61,579	56,573	—5,006	—8.13
Flax, hemp, and jute goods,	8	1,607,308	1,808,943	+201,635	+12.54
Food preparations,	356	53,529,085	63,181,111	+9,652,026	+18.03
Furniture,	131	5,496,225	5,985,217	+488,992	+8.90
Glass,	14	100,692	115,608	+14,916	+14.81
Glue, isinglass, and starch,	19	748,588	805,375	+56,787	+7.59

STOCK USED: BY INDUSTRIES — 1898, 1899 — Concluded.

INDUSTRIES.	Number of Estab- lishments Con- sidered	VALUE OF STOCK USED		INCREASE (+) OR DECREASE (—) IN 1899	
		1898	1899	Amounts	Percent- ages
Hair work (animal and human), . .	4	\$192,740	\$254,400	+\$61,660	+31.99
Hose: rubber, linen, etc., . . .	6	342,325	342,214	—111	—0.03
Hosiery and knit goods, . . .	38	1,973,202	2,382,833	+409,631	+20.76
Ink, mucllage, and paste, . . .	7	202,758	248,029	+45,271	+22.33
Ivory, bone, shell, and horn goods, etc.,	21	608,864	811,280	+202,416	+33.24
Jewelry,	90	2,800,043	3,754,201	+954,158	+34.08
Leather,	96	14,673,592	18,381,998	+3,708,406	+25.27
Leather goods,	26	1,297,367	1,707,596	+410,229	+31.62
Liquors (bottled) and carbonated beverages,	33	709,462	839,076	+129,614	+18.27
Liquors (malt),	34	2,610,078	2,330,826	—279,252	—10.70
Liquors (distilled),	5	250,251	439,460	+189,209	+75.61
Lumber,	25	1,095,845	1,488,642	+392,797	+35.84
Machines and machinery, . . .	358	9,467,633	13,441,050	+3,973,417	+41.97
Metals and metallic goods, . . .	393	10,930,871	15,581,749	+4,650,878	+42.55
Models, lasts, and patterns, . . .	47	320,962	368,231	+47,269	+14.73
Musical instruments and materials,	55	1,826,630	2,153,445	+326,815	+17.89
Oils and illuminating fluids, . .	10	917,115	1,184,613	+267,498	+29.17
Paints, colors, and crude chemicals,	28	931,591	1,026,252	+94,661	+10.16
Paper,	80	11,090,241	11,763,291	+673,050	+6.07
Paper goods,	41	3,558,459	3,717,265	+158,806	+4.46
Perfumes, toilet articles, etc., . .	6	142,160	144,601	+2,441	+1.72
Photographs and photographic ma- terials,	21	251,312	290,282	+38,970	+15.51
Polishes and dressing,	31	714,785	899,042	+184,257	+25.78
Printing, publishing, and bookbind- ing,	62	2,191,288	2,474,004	+282,716	+12.90
Print works, dye works, and bleach- eries,	49	14,434,507	17,807,124	+3,372,617	+23.36
Railroad construction and equip- ment,	16	1,377,084	2,210,026	+832,942	+60.49
Rubber and elastic goods, . . .	46	13,978,371	15,419,903	+1,441,532	+10.31
Saddlery and harness,	32	639,450	730,132	+90,682	+14.18
Scientific instruments and appli- ances,	22	829,032	977,083	+148,051	+17.86
Shipbuilding,	49	724,178	1,069,742	+345,564	+47.72
Silk and silk goods,	11	2,720,907	3,801,504	+1,080,597	+39.71
Sporting and athletic goods, . . .	7	126,493	166,748	+40,255	+31.82
Stone,	196	1,174,721	1,270,427	+95,706	+8.15
Quarried,	45	164,177	154,821	—9,356	—5.70
Cut and monumental,	151	1,010,544	1,115,606	+105,062	+10.40
Straw and palm leaf goods, . . .	17	2,653,354	2,570,771	—82,583	—3.11
Tallow, candles, soap, and grease, .	61	1,973,722	2,454,433	+480,711	+24.36
Tobacco, snuff, and cigars, . . .	73	1,667,443	1,713,346	+45,903	+2.75
Toys and games (children's), . . .	12	312,480	321,752	+9,272	+2.97
Trunks and valises,	7	40,339	56,485	+16,146	+40.03
Whips, lashes, and stocks, . . .	11	449,302	522,649	+73,347	+16.32
Wooden goods,	70	994,209	1,018,096	+23,887	+2.40
Woollen goods,	138	18,752,309	19,491,202	+738,893	+3.94
Woven goods and yarn,	119	18,303,868	18,875,314	+571,446	+3.12
Shoddy, waste, etc.,	19	448,441	615,888	+167,447	+37.34
Worsted goods,	34	15,752,486	19,402,627	+3,650,141	+23.17
ALL INDUSTRIES,	4,740	\$357,760,887	\$418,930,367	+\$61,169,480	+17.10

GOODS MADE: BY INDUSTRIES.

1898, 1899.

[In this presentation, the figures given under "Value of Goods Made and Work Done" represent the returns made by the same establishments in each industry, for the years 1898 and 1899, the whole number of establishments considered in "All Industries" being 4,740. Comparison is made, as regards the value of goods made and work done, between these two years. The relative increase or decrease in 1899 as compared with 1898 is given with its equivalent percentage.]

INDUSTRIES.	Number of Estab- lishments Con- sidered	VALUE OF GOODS MADE AND WORK DONE		INCREASE (+) OR DECREASE (-) IN 1899	
		1898	1899	Amounts	Percent- ages
Agricultural implements, . . .	9	\$1,025,675	\$1,219,811	+\$194,136	+18.93
Arms and ammunition, . . .	13	1,968,058	2,775,079	+807,021	+41.01
Artisans' tools, . . .	75	2,525,981	2,997,469	+471,488	+18.67
Awnings, sails, tents, etc., . .	44	624,731	739,273	+114,542	+18.33
Bicycles, tricycles, etc., . . .	21	3,439,270	3,249,519	-189,751	-5.52
Boots and shoes, . . .	688	107,103,875	122,695,311	+15,591,436	+14.56
Boots and shoes (factory product),	450	93,029,249	104,421,824	+11,392,575	+12.25
Soles, heels, and cut stock, . .	200	12,820,007	16,558,972	+3,738,965	+29.17
Boot and shoe findings, . . .	23	1,042,501	1,451,644	+409,143	+39.25
Stitching, heelings, etc., . . .	15	212,118	262,871	+50,753	+23.93
Boxes, barrels, kegs, etc., . . .	119	4,084,138	4,716,095	+631,957	+15.47
Boxes (paper), . . .	63	2,051,819	2,361,270	+309,451	+15.08
Brick, tiles, and sewer pipe, . .	67	1,313,440	1,324,477	+11,037	+0.84
Brooms, brushes, and mops, . .	22	1,361,471	1,554,541	+193,070	+14.18
Building materials, . . .	50	2,233,188	2,340,565	+107,377	+4.81
Burial cases, caskets, coffins, etc.,	6	346,153	328,066	-18,087	-5.23
Buttons and dress trimmings, . .	15	832,877	1,115,159	+282,282	+33.89
Carpentering, . . .	12	6,016,943	7,402,998	+1,386,055	+23.04
Textile, . . .	8	5,298,216	6,513,724	+1,215,508	+22.94
Other, . . .	4	718,727	889,274	+170,547	+23.73
Carriages and wagons, . . .	128	3,517,324	3,943,279	+425,955	+12.11
Cement, kaolin, lime, and plaster, .	9	205,592	217,615	+12,023	+5.85
Chemical preparations (compound- ed), . . .	12	1,131,053	1,378,717	+247,664	+21.90
Clocks and watches, . . .	11	2,376,184	2,560,588	+184,404	+7.76
Clothing, . . .	146	17,126,853	19,229,248	+2,102,395	+12.28
Cooking, lighting, and heating ap- paratus, . . .	42	2,468,725	3,080,271	+611,546	+24.77
Cordage and twine, . . .	21	4,897,689	6,614,425	+1,716,736	+35.05
Cotton goods, . . .	158	87,580,244	97,177,254	+9,597,010	+10.96
Cotton goods (woven), . . .	115	71,726,682	84,199,763	+12,473,081	+17.39
Cotton yarn and thread, . . .	35	14,122,658	11,174,381	-2,948,277	-20.88
Cotton waste, . . .	8	1,730,904	1,803,110	+72,206	+4.17
Crayons, pencils, crucibles, etc., .	3	82,177	110,694	+28,517	+34.70
Drugs and medicines, . . .	24	4,101,213	3,990,887	-110,326	-2.69
Dyestuffs, . . .	6	564,637	576,994	+12,357	+2.19
Earthen, plaster, and stone ware, .	10	240,299	254,738	+14,439	+6.01
Electrical apparatus and appliances,	20	6,219,852	8,669,451	+2,449,599	+39.38
Electroplating, . . .	12	165,869	197,496	+31,627	+19.07
Emery and sand paper and cloth, etc.,	9	855,920	1,036,191	+180,271	+21.06
Fancy articles, etc., . . .	16	518,979	601,793	+82,814	+15.96
Fertilizers, . . .	6	1,754,023	1,957,088	+203,065	+11.58
Fine arts and taxidermy, . . .	3	83,583	39,055	-44,528	-53.22
Fireworks and matches, . . .	4	159,012	143,031	-15,981	-10.05
Flax, hemp, and jute goods, . . .	8	3,100,283	3,585,876	+485,593	+15.66
Food preparations, . . .	356	69,131,339	77,720,090	+8,588,751	+12.42
Furniture, . . .	131	10,389,654	11,483,670	+1,094,016	+10.53
Glass, . . .	14	324,261	366,211	+41,950	+12.94
Glue, isinglass, and starch, . . .	19	1,130,212	1,175,421	+45,209	+4.00

GOODS MADE: BY INDUSTRIES — 1898, 1899 — Concluded.

INDUSTRIES.	Number of Estab- lishments Con- sidered	VALUE OF GOODS MADE AND WORK DONE		INCREASE (+) OR DECREASE (—) IN 1899	
		1898	1899	Amounts	Percent- ages
Hair work (animal and human), . .	4	\$247,350	\$322,600	+\$75,250	+30.42
Hose: rubber, linen, etc., . . .	6	1,112,954	964,115	—148,839	—13.37
Hosiery and knlt goods, . . .	38	4,651,960	5,376,267	+724,307	+15.57
Ink, mucilage, and paste, . . .	7	435,467	505,043	+69,576	+15.98
Ivory, bone, shell, and horn goods, etc.,	21	1,298,919	1,712,347	+413,428	+31.83
Jewelry,	90	6,836,720	8,925,039	+2,088,319	+30.55
Leather,	96	19,169,103	23,696,046	+4,526,943	+23.62
Leather goods,	26	2,092,618	2,810,742	+718,124	+34.32
Liquors (bottled) and carbonated beverages,	33	1,282,835	1,512,012	+229,177	+17.86
Liquors (malt),	34	9,524,784	9,984,673	+459,889	+4.83
Liquors (distilled),	5	791,822	1,193,093	+401,271	+50.68
Lumber,	25	1,886,566	2,587,323	+700,757	+37.14
Machines and machinery, . . .	358	27,374,142	36,619,659	+9,245,517	+33.77
Metals and metallic goods, . . .	393	23,743,665	30,216,235	+6,472,570	+27.26
Models, lasts, and patterns, . . .	47	1,123,817	1,247,575	+123,758	+11.01
Musical instruments and materials,	55	5,047,391	6,028,345	+980,954	+19.43
Oils and illuminating fluids, . .	10	1,168,964	1,504,305	+335,341	+28.69
Paints, colors, and crude chemicals,	28	1,489,535	1,683,306	+193,771	+13.01
Paper,	80	20,003,537	21,371,544	+1,368,007	+6.84
Paper goods,	41	5,746,418	6,177,988	+431,570	+7.51
Perfumes, toilet articles, etc., . .	6	177,305	177,285	—20	—0.01
Photographs and photographic ma- terials,	21	601,694	689,161	+87,467	+14.54
Polishes and dressing,	31	1,484,485	1,673,937	+189,452	+12.76
Printing, publishing, and bookbind- ing,	62	8,329,810	9,260,609	+930,799	+11.17
Print works, dye works, and bleach- eries,	49	20,662,824	25,354,641	+4,691,817	+22.71
Railroad construction and equip- ment,	16	2,802,568	4,029,222	+1,226,654	+43.77
Rubber and elastic goods, . . .	46	24,098,971	24,893,176	+794,205	+3.30
Saddlery and harness,	32	1,001,214	1,177,250	+176,036	+17.58
Scientific instruments and appli- ances,	22	1,940,980	2,127,172	+186,212	+9.59
Shipbuilding,	49	1,539,216	2,227,303	+688,087	+44.70
Silk and silk goods,	11	4,616,257	5,798,364	+1,182,107	+25.61
Sporting and athletic goods, . . .	7	337,131	429,349	+92,318	+27.38
Stone,	196	4,995,935	4,684,412	—311,523	—6.23
Quarried,	45	1,641,294	1,522,437	—118,857	—7.24
Cut and monumental,	151	2,954,641	3,161,975	+207,334	+7.02
Straw and palm leaf goods, . . .	17	4,748,005	4,620,758	—127,247	—2.68
Tallow, candles, soap, and grease, .	61	3,285,404	3,821,354	+535,950	+16.31
Tobacco, snuff, and cigars, . . .	73	3,871,687	4,140,844	+269,157	+6.95
Toys and games (children's), . . .	12	703,503	751,212	+47,709	+6.78
Trunks and valises,	7	116,110	147,716	+31,606	+27.22
Whips, lashes, and stocks, . . .	11	1,055,272	1,204,700	+149,428	+14.16
Wooden goods,	70	1,995,098	2,188,442	+193,344	+9.69
Woollen goods,	138	31,170,882	34,221,089	+3,050,207	+9.79
Woven goods and yarn,	119	30,313,184	33,020,144	+2,706,960	+8.93
Shoddy, waste, etc.,	19	857,698	1,200,945	+343,247	+40.02
Worsted goods,	34	25,577,035	32,428,873	+6,851,838	+26.79
ALL INDUSTRIES,	4,740	\$632,742,529	\$731,415,842	+\$98,673,313	+15.59

Analysis.

The returns of capital are usually the least satisfactory of any collected. Differences of opinion exist as to the real meaning of the term, and this Department has frequently pointed out that it is neither expected nor desired to obtain information as to capital which will show the financial status of the establishment; it is intended rather to determine as far as possible the amount of capital devoted to production.* To this end we have adopted seven specified items, which are believed to cover the various forms in which industrial capital devoted to production appears, namely :

- A. Value of LAND used only for manufacturing purposes (if owned).
- B. Value of BUILDINGS and FIXTURES used only for manufacturing purposes (if owned).
- C. Value of MACHINERY and MOTIVE POWER (if owned).
- D. Value of IMPLEMENTS and TOOLS (not included under C).
- E. Value of PATENT RIGHTS, PATTERNS, etc., (if owned).
- F. Cash on hand and in bank at the date of making the return.
- G. Value *at cost* of RAW MATERIALS and ARTICLES TO BE USED IN THE INDUSTRY, on hand at the date of making the return including also value of Goods in process of manufacture (completed goods on hand **not** included).

As, therefore, the statistics of capital presented in these volumes are collected on the same basis each year the returns are fairly comparable. By reference to the presentation on pages 91 and 92 it will be seen that the amount of capital invested in the 4,740 establishments was \$408,317,396 in 1898 and \$443,908,875 in 1899; an increase in 1899 of \$35,591,479, or 8.72 per cent. The highest percentage of increase (69.32) is found in Crayons, Pencils, Crucibles, etc., and the lowest (0.09), in Earthen, Plaster, and Stone Ware, yet the amounts involved are small in comparison with the capital shown for many of the other industries. Increases are shown for nearly every industry; the exceptions are noted below :

Bicycles, Tricycles, etc.	Chemical Preparations (Compound- ed).
Brick, Tiles, and Sewer Pipe.	Clocks and Watches.
Brooms, Brushes, and Mops.	Fertilizers.
Carpetings (other than textile).	

* See Annual Statistics of Manufactures, 1897, pp. 158-161.

Flax, Hemp, and Jute Goods.
 Food Preparations.
 Ink, Mucilage, and Paste.
 Liquors (Bottled) and Carbonated
 Beverages.
 Lumber.

Models, Lasts, and Patterns.
 Perfumes, Toilet Articles, etc.
 Straw and Palm Leaf Goods.
 Tobacco, Snuff, and Cigars.
 Wooden Goods.

In the following table, we reproduce from the preceding presentations the percentages of increase in capital, stock, and product in the nine leading industries of the Commonwealth in detail and in the aggregate, for the other industries in the aggregate, and for All Industries :

INDUSTRIES.	PERCENTAGES OF INCREASE IN 1899 AS COMPARED WITH 1898 IN—		
	Amount of Capital Invested	Value of Stock Used	Value of Goods Made and Work Done
Boots and shoes,	20.72	16.66	14.56
Carpetings,	0.73	18.53	23.04
Cotton goods,	12.84	7.11	10.96
Leather,	8.24	25.27	23.62
Machines and machinery,	7.51	41.97	33.77
Metals and metallic goods,	8.26	42.55	27.26
Paper,	5.13	6.07	6.84
Woollen goods,	8.35	3.94	9.79
Worsted goods,	4.73	23.17	26.79
Nine industries,	10.53	16.44	16.70
Other industries,	5.51	17.92	14.24
All industries,	8.72	17.10	15.59

From the above table it is readily seen that for stock used and goods made a practical uniformity exists in the percentages of increase for the nine industries (in the aggregate), for the other industries, and for All Industries. This uniformity disappears when the nine industries are considered in detail. It is evident that, outside of the natural increase in the quantity of stock used owing to the increased amount of business done in 1899, the market value of stock in many industries was higher in 1899 than in the previous year. Take, for example, Metals and Metallic Goods. The increase in value of goods made appears as 27.26 per cent while the value of stock increased 42.55 per cent over 1898.

Turning back to page 94 we find that the aggregate value of stock or materials used in the 4,740 establishments was in 1898, \$357,760,887, and in 1899, \$418,930,367, an increase

in the latter year of \$61,169,480, or 17.10 per cent. The largest percentage of increase (75.61) is found in Liquors (Distilled), and the smallest (1.04) in Cotton Waste. Only nine industries show a decrease in value of stock used in 1899 as compared with 1898; they are

Bicycles, Tricycles, etc.
Burial Cases, Caskets, Coffins, etc.
Cement, Kaolin, Lime, and Plaster.
Cotton Yarn and Thread.
Fireworks and Matches.

Hose: Rubber, Linen, etc.
Liquors (Malt).
Stone (Quarried).
Straw and Palm Leaf Goods.

On pages 95 and 96 is presented a comparison of the value of goods made and work done in the 4,740 establishments making returns in each of the years 1898 and 1899. The aggregate value of product as there shown, is, for 1898, \$632,742,529, and for 1899, \$731,415,842, an increase in the latter year of \$98,673,313, or 15.59 per cent. By reference to the analysis table on page 98 it is noted that each of the nine leading industries shows an increase in value of product in 1899 over 1898, the percentages ranging from 6.84 in Paper to 33.77 in Machines and Machinery. The increase for All Industries, as previously stated, was 15.59 per cent. The following 44 industries exhibit percentages of increase greater than that shown for All Industries :

INDUSTRIES.	Percent- ages	INDUSTRIES.	Percent- ages
Flax, hemp, and jute goods, . . .	15.66	Carpetings (textile),	22.94
Fancy articles, etc.,	15.96	Leather,	23.62
Ink, mucilage, and paste,	15.98	Carpetings (other than textile), . .	23.73
Tallow, candles, soap, and grease, .	16.31	Boots and shoes (stitching, heeling, etc.),	23.93
Cotton goods (woven),	17.39	Cooking, lighting, and heating ap- paratus,	24.77
Saddlery and harness,	17.58	Silk and silk goods,	25.61
Liquors (bottled) and carbonated beverages,	17.86	Worsted goods,	26.79
Awnings, sails, tents, etc.,	18.33	Trunks and valises,	27.22
Artisans' tools,	18.67	Metals and metallic goods, . . .	27.26
Agricultural implements,	18.93	Sporting and athletic goods, . . .	27.38
Fine arts and taxidermy,	18.97	Oils and illuminating fluids, . . .	28.69
Electroplating,	19.07	Boots and shoes (soles, heels, and cut stock),	29.17
Musical instruments and materials, .	19.43	Hair work (animal and human), . .	30.42
Emery and sand paper and cloth, etc.,	21.06	Jewelry,	30.55
Chemical preparations (compound- ed),	21.90	Ivory, bone, shell, and horn goods, etc.,	31.83
Print works, dye works, and bleach- eries,	22.71		

INDUSTRIES.	Percent-ages	INDUSTRIES.	Percent-ages
Machines and machinery, . . .	33.77	Electrical apparatus and appliances, . . .	39.38
Buttons and dress trimmings, . .	33.89	Woollengoods (shoddy, waste, etc.), . .	40.02
Leather goods,	34.32	Arms and ammunition,	41.01
Crayons, pencils, crucibles, etc., .	34.70	Railroad construction and equip-ment,	43.77
Cordage and twine,	35.05	Shipbuilding,	44.70
Lumber,	37.14	Liquors (distilled),	50.68
Boots and shoes (findings), . . .	39.25		

The following 35 industries exhibit an increase in the value of goods made and work done in 1899 over 1898 of less than 15.59 per cent, or the increase shown for All Industries :

INDUSTRIES.	Percent-ages	INDUSTRIES.	Percent-ages
Hosiery and knit goods,	15.57	Wooden goods,	9.69
Boxes, barrels, kegs, etc., . . .	15.47	Scientific instruments and appli-ances,	9.59
Boxes (paper),	15.08	Woollen goods (woven goods and yarn),	8.93
Photographs and photographic ma-terials,	14.54	Clocks and watches,	7.76
Brooms, brushes, and mops, . . .	14.18	Paper goods,	7.51
Whips, lashes, and stocks, . . .	14.16	Stone (cut and monumental), . . .	7.02
Paints, colors, and crude chemi-cals,	13.01	Tobacco, snuff, and cigars, . . .	6.95
Glass,	12.94	Paper,	6.84
Polishes and dressing,	12.76	Toys and games (children's), . . .	6.78
Food preparations,	12.42	Earthen, plaster, and stone ware, .	6.01
Clothing,	12.28	Cement, kaolin, lime, and plaster, .	5.85
Boots and shoes (factory product),	12.25	Liquors (malt),	4.83
Carriages and wagons,	12.11	Building materials,	4.81
Fertilizers,	11.58	Cotton goods (cotton waste), . . .	4.17
Printing, publishing, and bookbind-ing,	11.17	Glue, isinglass, and starch, . . .	4.00
Models, lasts, and patterns, . . .	11.01	Rubber and elastic goods,	3.30
Furniture,	10.53	Dyestuffs,	2.19
		Brick, tiles, and sewer pipe, . . .	0.84

The nine industries named below show a decrease in the value of goods made and work done in 1899 as compared with 1898 :

INDUSTRIES.	Percent-ages	INDUSTRIES.	Percent-ages
Perfumes, toilet articles, etc., . .	0.01	Stone (quarried),	7.24
Straw and palm leaf goods, . . .	2.68	Fireworks and matches,	10.05
Drugs and medicines,	2.69	Hose: rubber, linen, etc.,	13.37
Burial cases, caskets, coffins, etc.,	5.23	Cotton yarn and thread,	20.88
Bicycles, tricycles, etc.,	5.52		

Labor and its Compensation.

The statistical presentations shown under this subject head cover the number of persons employed, by industries, in the 4,740 establishments under consideration and the amount of wages paid to them. They are arranged as follows :

1. Average number of males and females employed and the aggregate of both sexes.

2. Average number of persons employed (both sexes) with increase or decrease, in number and percentages, in 1899 as compared with 1898.

3. Smallest number of persons employed (both sexes) with increase or decrease in 1899 as compared with 1898.

4. Greatest number of persons employed (both sexes) with increase or decrease in 1899 as compared with 1898.

5. The range of employment and unemployment in 1898 and 1899 ; in other words, the difference between the greatest and smallest number of persons employed, with increase or decrease in 1899 as compared with 1898.

6. The aggregate number of persons employed (both sexes) month by month and the percentages of employment and unemployment for the nine leading industries for 1898 and 1899.

7. The total amount paid in wages during each of the years 1898 and 1899 with the increase or decrease in the latter as compared with the former year expressed in amounts and percentages.

8. The average yearly earnings in 1898 and 1899 based upon the average number of persons employed and total amount paid in wages, with the increase or decrease in the latter as compared with the former year expressed in amounts and percentages.

9. Classified weekly earnings for the nine leading industries and for All Industries for males and females in 1898 and in 1899 for adult males and females and for all persons under 21 years of age irrespective of sex.

Attention is called to the head-notes to the tables which explain the meaning of the figures presented.

AVERAGE NUMBER OF PERSONS EMPLOYED: BY SEX AND INDUSTRIES.

1898, 1899.

[In this presentation, the average number of males, females, and both sexes for each industry are shown. The total number of establishments is 4,740, and the number of establishments in each industry is as given in all preceding presentations. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

INDUSTRIES.	1898			1899		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Agricultural implements,	613	—	613	650	—	650
Arms and ammunition,	1,448	132	1,580	1,920	256	2,176
Artisans' tools,	1,782	54	1,836	2,037	50	2,087
Awnings, sails, tents, etc.,	166	91	257	196	84	280
Bicycles, tricycles, etc.,	2,115	63	2,178	1,875	68	1,943
Boots and shoes,	35,483	16,239	51,722	38,686	17,357	56,043
Boots and shoes (factory product),	32,453	14,480	46,933	35,162	15,370	50,532
Soles, heels, and cut stock,	2,650	1,302	3,952	3,041	1,473	4,514
Boot and shoe findings,	245	232	477	300	292	592
Stitching, heelings, etc.,	135	225	360	183	222	405
Boxes, barrels, kegs, etc.,	2,172	447	2,619	2,404	485	2,889
Boxes (paper),	546	1,458	2,004	614	1,626	2,240
Brick, tiles, and sewer pipe,	1,375	—	1,375	1,266	12	1,278
Brooms, brushes, and mops,	405	389	794	473	440	913
Building materials,	1,061	—	1,061	1,121	—	1,121
Burial cases, caskets, coffins, etc.,	157	22	179	153	22	175
Buttons and dress trimmings,	319	544	863	367	660	1,027
Carpetings,	2,127	2,076	4,203	2,295	2,268	4,563
Textile,	2,025	1,998	4,023	2,181	2,175	4,356
Other,	102	78	180	114	93	207
Carriages and wagons,	1,885	12	1,897	2,012	15	2,027
Cement, kaolin, lime, and plaster,	129	—	129	135	—	135
Chemical preparations (compounded),	356	4	360	464	5	469
Clocks and watches,	1,035	1,308	2,343	1,102	1,333	2,435
Clothing,	2,474	6,390	8,864	2,721	6,628	9,349
Cooking, lighting, and heating apparatus,	1,672	10	1,682	1,866	9	1,875
Cordage and twine,	1,244	707	1,951	1,394	828	2,222
Cotton goods,	41,057	39,801	80,858	45,809	42,681	88,490
Cotton goods (woven),	36,162	34,603	70,765	40,213	37,089	77,302
Cotton yarn and thread,	4,633	5,065	9,698	5,312	5,446	10,758
Cotton waste,	262	133	395	284	146	430
Crayons, pencils, crucibles, etc.,	19	—	19	22	—	22
Drugs and medicines,	284	294	578	309	348	657
Dyestuffs,	84	47	131	98	28	126
Earthen, plaster, and stone ware,	183	37	220	169	37	206
Electrical apparatus and appliances,	2,886	535	3,421	3,804	686	4,490
Electroplating,	107	6	113	110	9	119
Emery and sand paper and cloth, etc.,	365	8	373	423	8	431
Fancy articles, etc.,	128	201	329	159	240	399
Fertilizers,	204	—	204	218	—	218
Fine arts and taxidermy,	16	1	17	19	—	19
Fireworks and matches,	61	29	90	62	23	85
Flax, hemp, and jute goods,	979	1,245	2,224	1,087	1,231	2,318

AVERAGE NUMBER OF PERSONS EMPLOYED: BY SEX AND
INDUSTRIES — 1898, 1899 — Concluded.

INDUSTRIES.	1898			1899		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Food preparations,	6,645	2,636	9,281	7,100	2,969	10,069
Furniture,	4,377	557	4,934	4,723	572	5,295
Glass,	247	14	261	272	16	288
Glue, isinglass, and starch,	325	42	367	337	41	378
Hair work (animal and human),	50	54	104	51	61	112
Hose: rubber, linen, etc.,	411	92	503	278	65	343
Hosiery and knit goods,	1,618	3,853	5,471	1,689	4,383	6,072
Ink, mucilage, and paste,	41	27	68	43	42	85
Ivory, bone, shell, and horn goods, etc.,	739	149	888	869	164	1,033
Jewelry,	2,569	1,350	3,919	3,071	1,809	4,880
Leather,	5,311	25	5,336	5,728	41	5,769
Leather goods,	541	90	631	666	115	781
Liquors (bottled) and carbonated beverages,	304	4	308	303	8	311
Liquors (malt),	1,531	-	1,531	1,509	-	1,509
Liquors (distilled),	21	-	21	23	-	23
Lumber,	641	7	648	784	-	784
Machines and machinery,	17,138	268	17,406	21,303	290	21,593
Metals and metallic goods,	11,978	1,512	13,490	13,697	1,601	15,298
Models, lasts, and patterns,	549	1	550	595	-	595
Musical instruments and materials,	2,375	151	2,526	2,892	221	3,113
Oils and illuminating fluids,	121	18	139	133	17	150
Paints, colors, and crude chemicals,	235	22	257	240	25	265
Paper,	5,429	3,513	8,942	5,588	3,566	9,154
Paper goods,	1,292	1,657	2,949	1,381	1,705	3,086
Perfumes, toilet articles, etc.,	12	13	25	14	13	27
Photographs and photographic materials,	133	100	233	121	96	217
Polishes and dressing,	119	137	256	116	157	273
Printing, publishing, and bookbinding,	2,637	1,565	4,202	2,911	1,734	4,645
Print works, dye works, and bleacheries,	4,969	1,011	5,980	5,433	1,183	6,616
Railroad construction and equipment,	2,182	-	2,182	2,780	-	2,780
Rubber and elastic goods,	5,187	4,321	9,508	5,288	4,153	9,441
Saddlery and harness,	300	102	402	358	121	479
Scientific instruments and appliances,	1,171	255	1,426	1,247	323	1,570
Shipbuilding,	792	-	792	1,168	-	1,168
Silk and silk goods,	848	1,681	2,529	979	1,841	2,820
Sporting and athletic goods,	156	43	199	192	53	245
Stone,	4,105	-	4,105	3,933	-	3,933
Quarried,	2,206	-	2,206	1,921	-	1,921
Cut and monumental,	1,899	-	1,899	2,012	-	2,012
Straw and palm leaf goods,	1,005	1,626	2,631	932	1,639	2,571
Tallow, candles, soap, and grease,	652	78	730	691	96	787
Tobacco, snuff, and cigars,	1,477	575	2,052	1,551	627	2,178
Toys and games (children's),	423	84	507	480	98	578
Trunks and valises,	67	6	73	74	6	80
Whips, lashes, and stocks,	300	123	423	398	162	560
Wooden goods,	1,215	64	1,279	1,321	70	1,391
Woollen goods,	12,186	6,926	19,112	12,235	6,971	19,206
Woven goods and yarn,	11,772	6,881	18,653	11,768	6,925	18,693
Shoddy, waste, etc.,	414	45	459	467	46	513
Worsted goods,	7,069	6,142	13,211	7,829	7,174	15,003
ALL INDUSTRIES,	216,430	113,044	329,474	239,366	121,665	361,031

AVERAGE NUMBER OF PERSONS EMPLOYED—BOTH SEXES: BY INDUSTRIES.

1898, 1899.

[In this presentation, the average number of persons employed of both sexes is brought forward from the preceding pages. The increase or decrease in 1899 as compared with 1898 is given in both number and percentages. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE NUM- BER OF PERSONS EMPLOYED: BOTH SEXES		INCREASE (+) OR DECREASE (-) IN 1899	
		1898	1899	Number	Percent- ages
Agricultural implements,	9	613	650	+37	+6.04
Arms and ammunition,	13	1,580	2,176	+596	+37.72
Artisans' tools,	75	1,836	2,087	+251	+13.67
Awnings, sails, tents, etc.,	44	257	280	+23	+8.95
Bicycles, tricycles, etc.,	21	2,178	1,943	-235	-10.79
Boots and shoes,	688	51,722	56,043	+4,321	+8.35
Boots and shoes (factory product),	450	46,933	50,532	+3,599	+7.67
Soles, heels, and cut stock,	200	3,952	4,514	+562	+14.22
Boot and shoe findings,	23	477	592	+115	+24.11
Stitching, heeling, etc.,	15	360	405	+45	+12.50
Boxes, barrels, kegs, etc.,	119	2,619	2,889	+270	+10.31
Boxes (paper),	63	2,004	2,240	+236	+11.78
Brick, tiles, and sewer pipe,	67	1,375	1,278	-97	-7.05
Brooms, brushes, and mops,	22	794	913	+119	+14.99
Building materials,	50	1,061	1,121	+60	+5.66
Burial cases, caskets, coffins, etc.,	6	179	175	-4	-2.23
Buttons and dress trimmings,	15	863	1,027	+164	+19.00
Carpetings,	12	4,203	4,563	+360	+8.57
Textile,	8	4,023	4,356	+333	+8.28
Other,	4	180	207	+27	+15.00
Carriages and wagons,	128	1,897	2,027	+130	+6.85
Cement, kaolin, lime, and plaster,	9	129	135	+6	+4.65
Chemical preparations (compounded),	12	360	469	+109	+30.28
Clocks and watches,	11	2,343	2,435	+92	+3.93
Clothing,	146	8,864	9,349	+485	+5.47
Cooking, lighting, and heating apparatus,	42	1,682	1,875	+193	+11.47
Cordage and twine,	21	1,951	2,222	+271	+13.89
Cotton goods,	158	80,858	88,490	+7,632	+9.44
Cotton goods (woven),	115	70,765	77,302	+6,537	+9.24
Cotton yarn and thread,	35	9,698	10,758	+1,060	+10.93
Cotton waste,	8	395	430	+35	+8.86
Crayons, pencils, crucibles, etc.,	3	19	22	+3	+15.79
Drugs and medicines,	24	578	657	+79	+13.67
Dyestuffs,	6	131	126	-5	-3.82
Earthen, plaster, and stone ware,	10	220	206	-14	-6.36
Electrical apparatus and appliances,	20	3,421	4,490	+1,069	+31.25
Electroplating,	12	113	119	+6	+5.31
Emery and sand paper and cloth, etc.,	9	373	431	+58	+15.55
Fancy articles, etc.,	16	329	399	+70	+21.28
Fertilizers,	6	204	218	+14	+6.86
Fine arts and taxidermy,	3	17	19	+2	+11.76
Fireworks and matches,	4	90	85	-5	-5.56
Flax, hemp, and jute goods,	8	2,224	2,318	+94	+4.23

AVERAGE NUMBER OF PERSONS EMPLOYED—BOTH SEXES:
BY INDUSTRIES—1898, 1899—Concluded.

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE NUM- BER OF PERSONS EMPLOYED: BOTH SEXES		INCREASE (+) OR DECREASE (—) IN 1899	
		1898	1899	Number	Percent- ages
Food preparations,	356	9,281	10,069	+788	+8.49
Furniture,	131	4,934	5,295	+361	+7.32
Glass,	14	261	288	+27	+10.34
Glue, isinglass, and starch,	19	367	378	+11	+3.00
Hair work (animal and human),	4	104	112	+8	+7.69
Hose: rubber, linen, etc.,	6	503	343	—160	—31.81
Hosiery and knit goods,	38	5,471	6,072	+601	+10.99
Ink, mucilage, and paste,	7	68	85	+17	+25.00
Ivory, bone, shell, and horn goods, etc.,	21	888	1,033	+145	+16.33
Jewelry,	90	3,919	4,880	+961	+24.52
Leather,	96	5,336	5,769	+433	+8.11
Leather goods,	26	631	781	+150	+23.77
Liquors (bottled) and carbonated beverages,	33	308	311	+3	+0.97
Liquors (malt),	34	1,531	1,509	—22	—1.44
Liquors (distilled),	6	21	23	+2	+9.52
Lumber,	25	648	784	+136	+20.99
Machines and machinery,	358	17,406	21,593	+4,187	+24.05
Metals and metallic goods,	393	13,490	15,298	+1,808	+13.40
Models, lasts, and patterns,	47	550	595	+45	+8.18
Musical instruments and materials,	55	2,526	3,113	+587	+23.24
Oils and illuminating fluids,	10	139	150	+11	+7.91
Paints, colors, and crude chemicals,	28	257	265	+8	+3.11
Paper,	80	8,942	9,154	+212	+2.37
Paper goods,	41	2,949	3,086	+137	+4.65
Perfumes, toilet articles, etc.,	6	25	27	+2	+8.00
Photographs and photographic materials,	21	233	217	—16	—6.87
Polishes and dressing,	31	256	273	+17	+6.64
Printing, publishing, and bookbinding,	62	4,202	4,645	+443	+10.54
Print works, dye works, and bleacheries,	49	5,980	6,616	+636	+10.64
Railroad construction and equipment,	16	2,182	2,780	+598	+27.41
Rubber and elastic goods,	46	9,508	9,441	—67	—0.70
Saddlery and harness,	32	402	479	+77	+19.15
Scientific instruments and appliances,	22	1,426	1,570	+144	+10.10
Shipbuilding,	49	792	1,168	+376	+47.47
Silk and silk goods,	11	2,529	2,820	+291	+11.51
Sporting and athletic goods,	7	199	245	+46	+23.12
Stone,	196	4,105	3,933	—172	—4.19
Quarried,	45	2,206	1,921	—285	—12.92
Cut and monumental,	151	1,899	2,012	+113	+5.95
Straw and palm leaf goods,	17	2,681	2,571	—60	—2.28
Tallow, candles, soap, and grease,	61	730	787	+57	+7.81
Tobacco, snuff, and cigars,	73	2,052	2,178	+126	+6.14
Toys and games (children's),	12	507	578	+71	+14.00
Trunks and valises,	7	73	80	+7	+9.59
Whips, lashes, and stocks,	11	423	560	+137	+32.39
Wooden goods,	70	1,279	1,391	+112	+8.76
Woolen goods,	138	19,112	19,206	+94	+0.49
Woven goods and yarn,	119	18,653	18,693	+40	+0.21
Shoddy, waste, etc.,	19	459	513	+54	+11.76
Worsted goods,	34	13,211	15,008	+1,792	+13.56
ALL INDUSTRIES,	4,740	329,474	361,031	+31,557	+9.58

SMALLEST NUMBER OF PERSONS EMPLOYED: BY INDUSTRIES.

1898, 1899.

[In this presentation, by the term "Periods of employment of smallest number" is meant the time, reported by each establishment, when the smallest number of persons was employed. The increase or decrease in 1899 as compared with 1898 is given in both number and percentages. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

INDUSTRIES.	Number of Establishments Considered	AGGREGATE NUMBER OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF SMALLEST NUMBER		INCREASE (+) OR DECREASE (−) IN 1899	
		1898	1899	Number	Percentages
Agricultural implements,	9	486	541	+55	+11.32
Arms and ammunition,	13	961	1,374	+413	+42.98
Artisans' tools,	75	1,645	1,716	+71	+4.32
Awnings, sails, tents, etc.,	44	163	195	+32	+19.63
Bicycles, tricycles, etc.,	21	1,143	1,105	−38	−3.32
Boots and shoes,	688	41,085	43,787	+2,702	+6.58
Boots and shoes (factory product),	450	37,291	39,275	+1,984	+5.32
Soles, heels, and cut stock,	200	5,137	5,071	+534	+17.02
Boot and shoe findings,	23	402	489	+87	+21.64
Stitching, heeling, etc.,	15	255	352	+97	+38.04
Boxes, barrels, kegs, etc.,	119	2,210	2,440	+230	+10.41
Boxes (paper),	63	1,677	1,932	+255	+15.21
Brick, tiles, and sewer pipe,	67	577	555	−22	−3.81
Brooms, brushes, and mops,	22	717	804	+87	+12.13
Building materials,	50	873	904	+31	+3.55
Burial cases, caskets, coffins, etc.,	6	171	177	+6	+3.51
Buttons and dress trimmings,	15	670	750	+80	+11.94
Carpetings,	12	3,344	4,307	+963	+28.80
Textile,	8	3,204	4,133	+929	+29.00
Other,	4	140	174	+34	+24.29
Carriages and wagons,	128	1,464	1,612	+148	+10.11
Cement, kaolin, lime, and plaster,	9	98	120	+22	+22.45
Chemical preparations (compounded),	12	331	424	+93	+28.10
Clocks and watches,	11	2,206	2,298	+87	+3.94
Clothing,	146	6,921	7,788	+867	+12.53
Cooking, lighting, and heating apparatus,	42	1,268	1,476	+208	+16.40
Cordage and twine,	21	1,089	1,863	+764	+9.65
Cotton goods,	158	69,292	84,202	+14,910	+21.52
Cotton goods (woven),	115	59,845	73,827	+13,982	+23.36
Cotton yarn and thread,	35	9,081	9,979	+898	+9.89
Cotton waste,	8	366	396	+30	+8.20
Crayons, pencils, crucibles, etc.,	3	15	17	+2	+13.33
Drugs and medicines,	24	441	497	+56	+12.70
Dyestuffs,	6	76	87	+11	+14.47
Earthen, plaster, and stone ware,	10	203	191	−12	−5.91
Electrical apparatus and appliances,	20	2,742	3,511	+769	+28.05
Electroplating,	12	99	103	+4	+4.04
Emery and sand paper and cloth, etc.,	9	322	391	+69	+21.43
Fancy articles, etc.,	16	148	200	+52	+35.14
Fertilizers,	6	188	198	+10	+5.32
Fine arts and taxidermy,	3	16	18	+2	+12.50

SMALLEST NUMBER OF PERSONS EMPLOYED: BY INDUSTRIES — 1898, 1899 — Concluded.

INDUSTRIES.	Number of Establishments Considered	AGGREGATE NUMBER OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF SMALLEST NUMBER		INCREASE (+) OR DECREASE (—) IN 1899	
		1898	1899	Number	Percentages
Fireworks and matches,	4	50	48	—2	—4.00
Flax, hemp, and jute goods,	8	2,144	2,219	+75	+3.50
Food preparations,	356	7,957	8,236	+279	+3.51
Furniture,	131	4,160	4,348	+188	+4.52
Glass,	14	172	172	*=	*=
Glue, isinglass, and starch,	19	298	309	+11	+3.69
Hair work (animal and human),	4	96	106	+10	+10.42
Hose: rubber, linen, etc.,	6	252	261	+9	+3.57
Hosiery and knit goods,	38	4,792	5,422	+630	+13.15
Ink, mucilage, and paste,	7	54	75	+21	+38.89
Ivory, bone, shell, and horn goods, etc.,	21	753	917	+164	+21.78
Jewelry,	90	2,944	3,792	+848	+28.80
Leather,	96	4,150	4,743	+593	+14.29
Leather goods,	26	578	629	+51	+8.82
Liquors (bottled) and carbonated beverages,	33	231	220	—11	—4.76
Liquors (malt),	34	1,413	1,400	—13	—0.92
Liquors (distilled),	5	18	23	+5	+27.78
Lumber,	25	535	516	—19	—3.55
Machines and machinery,	358	14,341	17,362	+3,021	+21.07
Metals and metallic goods,	393	10,843	12,699	+1,856	+17.12
Models, lasts, and patterns,	47	477	499	+22	+4.61
Musical instruments and materials,	55	2,085	2,760	+675	+32.37
Oils and illuminating fluids,	10	112	122	+10	+8.93
Paints, colors, and crude chemicals,	28	235	238	+3	+1.28
Paper,	80	8,109	8,254	+145	+1.79
Paper goods,	41	2,504	2,673	+169	+6.75
Perfumes, toilet articles, etc.,	6	14	23	+9	+64.29
Photographs and photographic materials,	21	192	182	—10	—5.21
Polishes and dressing,	31	192	188	—4	—2.08
Printing, publishing, and bookbinding,	62	3,626	4,164	+538	+14.84
Print works, dye works, and bleacheries,	49	5,126	5,920	+794	+15.49
Railroad construction and equipment,	16	1,891	2,479	+588	+31.09
Rubber and elastic goods,	46	8,232	8,537	+305	+3.71
Saddlery and harness,	32	369	387	+18	+4.88
Scientific instruments and appliances,	22	1,187	1,286	+99	+8.34
Shipbuilding,	49	497	701	+204	+41.05
Silk and silk goods,	11	2,189	2,534	+345	+15.76
Sporting and athletic goods,	7	114	135	+21	+18.42
Stone,	196	2,747	2,425	—322	—11.72
Quarried,	45	1,481	1,008	—473	—31.94
Cut and monumental,	151	1,266	1,417	+151	+11.93
Straw and palm leaf goods,	17	628	595	—33	—5.25
Tallow, candles, soap, and grease,	61	655	717	+62	+9.47
Tobacco, snuff, and cigars,	73	1,648	1,809	+161	+9.77
Toys and games (children's),	12	342	358	+16	+4.68
Trunks and valises,	7	61	62	+1	+1.64
Whips, lashes, and stocks,	11	376	532	+156	+41.49
Wooden goods,	70	1,012	1,174	+162	+16.01
Woollen goods,	138	14,855	15,709	+854	+5.75
Woven goods and yarn,	119	14,499	15,329	+830	+5.72
Shoddy, waste, etc.,	19	356	380	+24	+6.74
Worsted goods,	34	9,946	13,262	+3,316	+33.34
ALL INDUSTRIES,	4,740	268,453	306,800	+38,347	+14.28

* No change.

GREATEST NUMBER OF PERSONS EMPLOYED: BY INDUSTRIES.

1898, 1899.

[In this presentation, by the term "Periods of employment of greatest number" is meant the time, reported by each establishment, when the greatest number of persons was employed. The increase or decrease in 1899 as compared with 1898 is given in both number and percentages. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

INDUSTRIES.	Number of Estab-lishments Con-sidered	AGGREGATE NUMBER OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF GREATEST NUMBER		INCREASE (+) OR DECREASE (-) IN 1899	
		1898	1899	Number	Percent-ages
Agricultural implements,	9	688	733	+45	+6.54
Arms and ammunition,	13	2,155	2,803	+648	+30.07
Artisans' tools,	75	1,999	2,340	+341	+17.06
Awnings, sails, tents, etc.,	44	396	395	-1	-0.25
Bicycles, tricycles, etc.,	21	3,480	2,949	-531	-15.26
Boots and shoes,	688	61,983	66,336	+4,353	+7.02
Boots and shoes (factory product),	450	56,194	59,812	+3,618	+6.44
Soles, heels, and cut stock,	200	4,793	5,319	+526	+10.97
Boot and shoe findings,	23	559	706	+147	+26.30
Stitching, heelings, etc.,	15	437	499	+62	+14.19
Boxes, barrels, kegs, etc.,	119	3,011	3,339	+328	+10.89
Boxes (paper),	63	2,449	2,567	+118	+4.82
Brick, tiles, and sewer pipe,	67	2,564	2,423	-138	-5.38
Brooms, brushes, and mops,	22	899	1,036	+137	+15.24
Building materials,	50	1,254	1,324	+70	+5.58
Burial cases, caskets, coffins, etc.,	6	189	186	-3	-1.59
Buttons and dress trimmings,	15	1,145	1,223	+78	+6.81
Carpetings,	12	4,879	4,902	+23	+0.47
Textile,	8	4,654	4,668	+14	+0.30
Other,	4	225	234	+9	+4.00
Carriages and wagons,	128	2,362	2,454	+92	+3.90
Cement, kaolin, lime, and plaster,	9	153	156	+3	+1.96
Chemical preparations (compounded),	12	396	521	+125	+31.57
Clocks and watches,	11	2,577	2,624	+47	+1.82
Clothing,	146	10,504	10,955	+451	+4.29
Cooking, lighting, and heating apparatus,	42	1,981	2,198	+217	+10.95
Cordage and twine,	21	2,236	2,460	+224	+10.02
Cotton goods,	158	87,434	92,316	+4,882	+5.58
Cotton goods (woven),	115	76,787	79,907	+3,120	+4.06
Cotton yarn and thread,	35	10,227	11,952	+1,725	+16.87
Cotton waste,	8	420	457	+37	+8.81
Crayons, pencils, crucibles, etc.,	3	23	23	*=	*=
Drugs and medicines,	24	728	838	+110	+15.11
Dyestuffs,	6	160	150	-10	-6.25
Earthen, plaster, and stone ware,	10	242	233	-9	-3.72
Electrical apparatus and appliances,	20	3,818	5,358	+1,540	+40.34
Electroplating,	12	135	134	-1	-0.74
Emery and sand paper and cloth, etc.,	9	447	466	+19	+4.25
Fancy articles, etc.,	16	624	705	+81	+12.93
Fertilizers,	6	233	246	+13	+5.58
Fine arts and taxidermy,	3	21	22	+1	+4.76

* No change.

GREATEST NUMBER OF PERSONS EMPLOYED: BY INDUSTRIES
—1898, 1899—Concluded.

INDUSTRIES.	Number of Estab- lishments Con- sidered	AGGREGATE NUMBER OF PERSONS EM- PLOYED AT PERIODS OF EMPLOYMENT OF GREATEST NUMBER		INCREASE (+) OR DECREASE (—) IN 1899	
		1898	1899	Number	Percent- ages
Fireworks and matches,	4	123	122	—1	—0.81
Flax, hemp, and jute goods,	8	2,308	2,458	+150	+6.50
Food preparations,	356	11,227	12,417	+1,190	+10.60
Furniture,	131	5,693	6,208	+515	+9.05
Glass,	14	322	343	+21	+6.52
Glue, isinglass, and starch,	19	581	587	+6	+1.03
Hair work (animal and human),	4	109	117	+8	+7.34
Hose: rubber, linen, etc.,	6	961	393	—568	—59.11
Hosiery and knit goods,	38	6,061	6,764	+703	+11.60
Ink, mucilage, and paste,	7	81	105	+24	+29.63
Ivory, bone, shell, and horn goods, etc.,	21	1,035	1,236	+201	+19.42
Jewelry,	90	5,037	5,940	+903	+17.93
Leather,	96	6,413	6,881	+468	+7.30
Leather goods,	26	702	979	+277	+39.46
Liquors (bottled) and carbonated beverages,	33	421	460	+39	+9.26
Liquors (malt),	34	1,663	1,614	—49	—2.95
Liquors (distilled),	5	24	26	+2	+8.33
Lumber,	25	870	962	+92	+10.57
Machines and machinery,	358	20,287	26,103	+5,816	+28.67
Metals and metallic goods,	393	16,144	17,926	+1,782	+11.04
Models, lasts, and patterns,	47	653	696	+43	+6.58
Musical instruments and materials,	55	2,889	3,465	+576	+19.94
Oils and illuminating fluids,	10	184	200	+16	+8.70
Paints, colors, and crude chemicals,	28	277	290	+13	+4.69
Paper,	80	9,455	9,967	+512	+5.42
Paper goods,	41	3,336	3,568	+232	+6.95
Perfumes, toilet articles, etc.,	6	31	33	+2	+6.45
Photographs and photographic materials,	21	266	242	—24	—9.02
Polishes and dressing,	31	311	361	+50	+16.08
Printing, publishing, and bookbinding,	62	4,798	5,256	+458	+9.55
Print works, dye works, and bleacheries,	49	6,508	7,152	+644	+9.90
Railroad construction and equipment,	16	2,561	3,169	+608	+23.74
Rubber and elastic goods,	46	10,770	10,249	—521	—4.84
Saddlery and harness,	32	440	553	+113	+25.68
Scientific instruments and appliances,	22	1,565	1,763	+198	+12.65
Shipbuilding,	49	1,208	1,716	+508	+42.05
Silk and silk goods,	11	2,788	3,048	+260	+9.33
Sporting and athletic goods,	7	307	336	+29	+9.45
Stone,	196	5,455	5,366	—89	—1.63
Quarried,	45	2,849	2,767	—82	—2.88
Cut and monumental,	151	2,606	2,599	—7	—0.27
Straw and palm leaf goods,	17	4,743	4,602	—141	—2.97
Tallow, candles, soap, and grease,	61	796	858	+62	+7.79
Tobacco, snuff, and cigars,	73	2,457	2,553	+96	+3.91
Toys and games (children's),	12	651	797	+146	+22.43
Trunks and valises,	7	78	112	+34	+43.59
Whips, lashes, and stocks,	11	509	588	+79	+15.52
Wooden goods,	70	1,499	1,650	+151	+10.07
Woollen goods,	138	21,481	22,125	+644	+3.00
Woven goods and yarn,	119	20,906	21,485	+579	+2.77
Shoddy, waste, etc.,	19	575	640	+65	+11.30
Worsted goods,	34	15,136	16,783	+1,647	+10.88
ALL INDUSTRIES,	4,740	382,379	413,557	+31,178	+8.15

RANGE OF EMPLOYMENT AND UNEMPLOYMENT: BY INDUSTRIES.

1898, 1899.

[In this presentation, the excess of greatest over smallest number of persons as obtained from the tables on pages 106 to 109 is shown, and a comparison is made between the two years. The relative increase or decrease in the excess of greatest over smallest number employed in 1899 as compared with 1898 is given with its equivalent percentage. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

INDUSTRIES.	Number of Estab- lishments Con- sidered	EXCESS OF GREATEST OVER SMALLEST NUMBER OF PERSONS EMPLOYED		INCREASE (+) OR DECREASE (-) IN 1899	
		1898	1899	Number	Percent- ages
Agricultural implements,	9	202	192	-10	-4.95
Arms and ammunition,	13	1,194	1,429	+235	+19.68
Artisans' tools,	75	354	624	+270	+76.27
Awnings, sails, tents, etc.,	44	233	200	-33	-14.16
Bicycles, tricycles, etc.,	21	2,337	1,844	-493	-21.10
Boots and shoes,	688	20,898	22,549	+1,651	+7.90
Boots and shoes (factory product),	450	18,903	20,537	+1,634	+8.64
Soles, heels, and cut stock,	200	1,656	1,648	-8	-0.48
Boot and shoe findings,	23	157	217	+60	+38.22
Stitching, heelings, etc.,	15	182	147	-35	-19.23
Boxes, barrels, kegs, etc.,	119	801	899	+98	+12.23
Boxes (paper),	63	772	635	-137	-17.75
Brick, tiles, and sewer pipe,	67	1,987	1,871	-116	-5.84
Brooms, brushes, and mops,	22	182	232	+50	+27.47
Building materials,	50	351	420	+69	+10.24
Burial cases, caskets, coffins, etc.,	6	18	9	-9	-50.00
Buttons and dress trimmings,	15	475	473	-2	-0.42
Carpetings,	12	1,535	595	-940	-61.24
Textile,	8	1,450	535	-915	-63.10
Other,	4	85	60	-25	-29.41
Carriages and wagons,	128	898	842	-56	-6.24
Cement, kaolin, lime, and plaster,	9	55	36	-19	-34.55
Chemical preparations (compounded),	12	65	97	+32	+49.23
Clocks and watches,	11	371	331	-40	-10.78
Clothing,	146	3,583	3,167	-416	-11.61
Cooking, lighting, and heating apparatus,	42	713	722	+9	+1.26
Cordage and twine,	21	537	597	+60	+11.17
Cotton goods,	158	18,142	8,114	-10,028	-55.28
Cotton goods (woven),	115	16,942	6,080	-10,862	-64.11
Cotton yarn and thread,	35	1,146	1,973	+827	+72.16
Cotton waste,	8	54	61	+7	+12.96
Crayons, pencils, crucibles, etc.,	3	8	6	-2	-25.00
Drugs and medicines,	24	287	341	+54	+18.82
Dyestuffs,	6	84	63	-21	-25.00
Earthen, plaster, and stone ware,	10	39	42	+3	+7.69
Electrical apparatus and appliances,	20	1,076	1,847	+771	+71.65
Electroplating,	12	36	31	-5	-13.89
Emery and sand paper and cloth, etc.,	9	125	75	-50	-40.00
Fancy articles, etc.,	16	476	505	+29	+6.09
Fertilizers,	6	45	48	+3	+6.67
Fine arts and taxidermy,	3	5	4	-1	-20.00

RANGE OF EMPLOYMENT AND UNEMPLOYMENT: BY INDUSTRIES — 1898, 1899 — Concluded.

INDUSTRIES.	Number of Establishments Considered	EXCESS OF GREATEST OVER SMALLEST NUMBER OF PERSONS EMPLOYED		INCREASE (+) OR DECREASE (—) IN 1899	
		1898	1899	Number	Percentages
Fireworks and matches,	4	73	74	+1	+1.37
Flax, hemp, and jute goods,	8	164	239	+75	+45.73
Food preparations,	356	3,270	4,181	+911	+27.98
Furniture,	131	1,533	1,860	+327	+21.33
Glass,	14	150	171	+21	+14.00
Glue, isinglass, and starch,	19	283	278	—5	—1.77
Hair work (animal and human),	4	13	11	—2	—15.38
Hose: rubber, linen, etc.,	6	709	132	—577	—81.38
Hosiery and knit goods,	38	1,269	1,342	+73	+5.75
Ink, mucilage, and paste,	7	27	30	+3	+11.11
Ivory, bone, shell, and horn goods, etc.,	21	282	319	+37	+13.12
Jewelry,	90	2,093	2,148	+55	+2.63
Leather,	96	2,263	2,138	—125	—5.52
Leather goods,	26	124	350	+226	+182.26
Liquors (bottled) and carbonated beverages,	33	190	240	+50	+26.32
Liquors (malt),	34	250	214	—36	—14.40
Liquors (distilled),	5	6	3	—3	—50.00
Lumber,	25	335	446	+111	+33.13
Machines and machinery,	358	5,946	8,741	+2,795	+47.01
Metals and metallic goods,	393	5,301	5,227	—74	—1.40
Models, lasts, and patterns,	47	176	197	+21	+11.93
Musical instruments and materials,	55	894	705	—99	—12.31
Oils and illuminating fluids,	10	72	78	+6	+8.33
Paints, colors, and crude chemicals,	28	42	52	+10	+23.81
Paper,	80	1,346	1,713	+367	+27.27
Paper goods,	41	832	895	+63	+7.57
Perfumes, toilet articles, etc.,	6	17	10	—7	—41.18
Photographs and photographic materials,	21	74	60	—14	—18.92
Polishes and dressing,	31	119	173	+54	+45.38
Printing, publishing, and bookbinding,	62	1,172	1,092	—80	—6.83
Print works, dye works, and bleacheries,	49	1,382	1,232	—150	—10.85
Railroad construction and equipment,	16	670	690	+20	+2.99
Rubber and elastic goods,	46	2,538	1,712	—826	—32.55
Saddlery and harness,	32	71	166	+95	+133.80
Scientific instruments and appliances,	22	378	477	+99	+26.19
Shipbuilding,	49	711	1,015	+304	+42.76
Silk and silk goods,	11	599	514	—85	—14.19
Sporting and athletic goods,	7	193	201	+8	+4.15
Stone,	196	2,708	2,941	+233	+8.60
Quarried,	45	1,368	1,759	+391	+28.58
Cut and monumental,	151	1,340	1,182	—158	—11.79
Straw and palm leaf goods,	17	4,115	4,007	—108	—2.62
Tallow, candles, soap, and grease,	61	141	141	*=	*=
Tobacco, snuff, and cigars,	73	809	744	—65	—8.03
Toys and games (children's),	12	309	439	+130	+42.07
Trunks and valises,	7	17	50	+33	+194.12
Whips, lashes, and stocks,	11	133	56	—77	—57.89
Wooden goods,	70	487	476	—11	—2.26
Woollen goods,	138	6,626	6,416	—210	—3.17
Woven goods and yarn,	119	6,407	6,156	—251	—3.92
Shoddy, waste, etc.,	19	219	260	+41	+18.72
Worsted goods,	34	5,190	3,521	—1,669	—32.16
ALL INDUSTRIES,	4,740	113,926	106,757	—7,169	—6.29

* No change.

PERSONS EMPLOYED. AGGREGATES, BY MONTHS.

1898, 1899.

[This presentation shows, for the nine leading industries and for All Industries, the aggregate number of persons employed during each month of the years 1898 and 1899, together with percentages of employment and unemployment based on the month when the greatest number of persons was employed; this greatest number has been considered as 100 per cent and the variations from this percentage indicate the fluctuations in employment. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

INDUSTRIES AND MONTHS.	1898			1899		
	Number of Persons Employed in Estab- lishments Con- sidered	PERCENTAGES OF —		Number of Persons Employed in Estab- lishments Con- sidered	PERCENTAGES OF —	
		Em- ployment	Unem- ployment		Em- ployment	Unem- ployment
<i>Boots and Shoes (Aggregates*).</i>						
January,	51,513	95.22	4.78	52,253	90.38	9.62
February,	52,826	97.64	2.36	54,791	94.77	5.23
March,	54,101	100.00	—	56,815	98.27	1.73
April,	53,688	99.24	0.76	56,897	98.41	1.59
May,	51,156	94.56	5.44	56,621	97.93	2.07
June,	49,473	91.45	8.55	55,919	96.72	3.28
July,	50,019	92.45	7.55	55,743	96.41	3.59
August,	51,828	95.80	4.20	57,716	99.83	0.17
September,	51,554	95.29	4.71	57,817	100.00	—
October,	51,790	95.73	4.27	56,162	97.14	2.86
November,	50,512	93.37	6.63	56,115	97.06	2.94
December,	51,202	94.64	5.36	55,068	95.25	4.75
<i>Boots and Shoes (Factory Prod- uct).</i>						
January,	46,548	94.97	5.03	47,125	90.20	9.80
February,	47,803	97.53	2.47	49,537	94.81	5.19
March,	49,014	100.00	—	51,338	98.26	1.74
April,	48,712	99.38	0.62	51,354	98.29	1.71
May,	46,366	94.60	5.40	51,182	97.96	2.04
June,	44,935	91.68	8.32	50,371	96.79	3.21
July,	45,581	93.00	7.00	50,361	96.39	3.61
August,	47,270	96.44	3.56	52,155	99.83	0.17
September,	46,918	95.72	4.28	52,246	100.00	—
October,	47,110	96.12	3.88	50,576	96.80	3.20
November,	45,894	93.63	6.37	50,391	96.45	3.55
December,	46,401	94.67	5.33	49,136	94.05	5.95
<i>Boots and Shoes (Soles, Heels, and Cut Stock).</i>						
January,	4,079	97.70	2.30	4,117	84.35	15.65
February,	4,103	98.28	1.72	4,226	86.58	13.42
March,	4,175	100.00	—	4,432	90.80	9.20
April,	4,116	98.59	1.41	4,535	92.91	7.09
May,	3,973	95.16	4.84	4,464	91.46	8.54
June,	3,794	90.87	9.13	4,416	90.47	9.53
July,	3,706	88.77	11.23	4,417	90.49	9.51
August,	3,760	90.06	9.94	4,601	94.26	5.74
September,	3,818	91.45	8.55	4,598	94.20	5.80
October,	3,851	92.24	7.76	4,596	94.16	5.84
November,	3,796	90.92	9.08	4,707	96.44	3.56
December,	3,943	94.44	5.56	4,881	100.00	—

* These figures include the persons employed in Boots and Shoes (Factory Product); Soles, Heels, and Cut Stock; Findings; and Stitching, Heeling, etc.

PERSONS EMPLOYED. AGGREGATES, BY MONTHS—1898, 1899
— Continued.

INDUSTRIES AND MONTHS.	1898			1899		
	Number of Persons Employed in Estab- lishments Con- sidered	PERCENTAGES OF —		Number of Persons Employed in Estab- lishments Con- sidered	PERCENTAGES OF —	
		Em- ployment	Unem- ployment		Em- ployment	Unem- ployment
<i>Boots and Shoes (Findings).</i>						
January,	494	94.82	5.18	561	87.79	12.21
February,	521	100.00	-	568	88.89	11.11
March,	512	98.27	1.73	591	92.49	7.51
April,	473	90.79	9.21	580	90.77	9.23
May,	440	84.45	15.55	568	88.89	11.11
June,	436	83.69	16.31	556	87.01	12.99
July,	450	86.37	13.63	579	90.61	9.39
August,	475	91.17	8.83	606	94.84	5.16
September,	484	92.90	7.10	612	95.77	4.23
October,	461	88.48	11.52	614	96.09	3.91
November,	466	89.44	10.56	625	97.81	2.19
December,	483	92.71	7.29	639	100.00	-
<i>Boots and Shoes (Stitching, Heel- ing, etc.).</i>						
January,	392	98.00	2.00	450	97.83	2.17
February,	399	99.75	0.25	460	100.00	-
March,	400	100.00	-	454	98.70	1.30
April,	387	96.75	3.25	428	93.04	6.96
May,	377	94.25	5.75	407	88.48	11.52
June,	308	77.00	23.00	376	81.74	18.26
July,	282	70.50	29.50	386	83.91	16.09
August,	323	80.75	19.25	354	76.96	23.04
September,	334	83.50	16.50	361	78.48	21.52
October,	368	92.00	8.00	376	81.74	18.26
November,	356	89.00	11.00	392	85.22	14.78
December,	375	93.75	6.25	412	89.57	10.43
<i>Carpetings (Aggregates*).</i>						
January,	4,574	92.31	7.69	4,045	84.10	15.90
February,	4,695	94.75	5.25	4,561	94.82	5.18
March,	4,579	92.41	7.59	4,562	94.84	5.16
April,	3,884	78.38	21.62	4,495	93.45	6.55
May,	3,695	74.57	25.43	4,493	93.41	6.59
June,	4,024	81.21	18.79	4,617	95.99	4.01
July,	4,412	89.04	10.96	4,653	96.74	3.26
August,	4,305	86.88	13.12	4,708	97.88	2.12
September,	4,234	85.45	14.55	4,786	99.50	0.50
October,	4,369	88.17	11.83	4,242	88.19	11.81
November,	4,830	97.48	2.52	4,810	100.00	-
December,	4,955	100.00	-	4,768	99.13	0.87
<i>Carpetings (Textile).</i>						
January,	4,396	92.43	7.57	3,861	84.32	15.68
February,	4,520	95.04	4.96	4,378	95.61	4.39
March,	4,424	93.02	6.98	4,379	95.63	4.37
April,	3,731	78.45	21.55	4,319	94.32	5.68
May,	3,533	74.29	25.71	4,293	93.75	6.25
June,	3,864	81.24	18.76	4,410	96.31	3.69
July,	4,242	89.19	10.81	4,446	97.10	2.90
August,	4,120	86.63	13.37	4,482	97.88	2.12
September,	4,043	85.01	14.99	4,554	99.45	0.55
October,	4,163	87.53	12.47	4,010	87.57	12.43
November,	4,616	97.06	2.94	4,579	100.00	-
December,	4,756	100.00	-	4,547	99.30	0.70
<i>Carpetings (Other).</i>						
January,	178	83.18	16.82	184	79.31	20.69
February,	175	81.78	18.22	183	78.88	21.12
March,	155	72.43	27.57	183	78.88	21.12
April,	153	71.50	28.50	176	75.86	24.14
May,	162	75.70	24.30	200	86.21	13.79
June,	160	74.77	25.23	207	89.22	10.78
July,	170	79.44	20.56	207	89.22	10.78
August,	185	86.45	13.55	226	97.41	2.59
September,	191	89.25	10.75	232	100.00	-
October,	206	96.26	3.74	232	100.00	-
November,	214	100.00	-	231	99.57	0.43
December,	199	92.99	7.01	221	95.26	4.74

* These figures include the persons employed in Carpetings (Textile) and Carpetings (Other).

PERSONS EMPLOYED. AGGREGATES, BY MONTHS—1898, 1899
— Continued.

INDUSTRIES AND MONTHS.	1898			1899		
	Number of Persons Employed in Estab- lishments Con- sidered	PERCENTAGES OF—		Number of Persons Employed in Estab- lishments Con- sidered	PERCENTAGES OF—	
		Em- ployment	Unem- ployment		Em- ployment	Unem- ployment
<i>Cotton Goods (Aggregates*).</i>						
January,	73,658	94.74	5.26	87,846	97.18	2.82
February,	75,059	89.27	10.73	87,939	97.29	2.71
March,	76,175	90.60	9.40	88,458	97.86	2.14
April,	79,506	94.56	5.44	89,054	98.52	1.48
May,	80,722	96.01	3.99	88,494	97.90	2.10
June,	82,574	98.21	1.79	88,349	97.74	2.26
July,	81,724	97.20	2.80	88,170	97.54	2.46
August,	81,682	97.15	2.85	87,491	96.79	3.21
September,	81,802	97.29	2.71	88,418	97.82	2.18
October,	83,717	98.57	0.43	87,917	97.26	2.74
November,	83,461	99.27	0.73	89,186	98.67	1.33
December,	84,077	100.00	—	90,392	100.00	—
<i>Cotton Goods (Woven).</i>						
January,	69,470	93.97	6.03	77,230	98.64	1.36
February,	64,900	87.79	12.21	77,169	98.56	1.44
March,	65,796	89.00	11.00	77,629	99.15	0.85
April,	69,133	93.51	6.49	77,523	99.01	0.99
May,	70,569	95.46	4.54	77,601	99.11	0.89
June,	72,669	98.30	1.70	77,473	98.95	1.05
July,	71,858	97.20	2.80	76,656	97.91	2.09
August,	71,825	97.15	2.85	76,540	97.76	2.24
September,	71,899	97.25	2.75	76,777	98.06	1.94
October,	73,617	99.58	0.42	76,778	98.06	1.94
November,	73,423	99.32	0.68	77,883	99.47	0.53
December,	73,929	100.00	—	78,295	100.00	—
<i>Cotton Goods (Yarn and Thread).</i>						
January,	9,806	98.18	1.82	10,201	87.40	12.60
February,	9,771	97.83	2.17	10,361	88.77	11.23
March,	9,988	100.00	—	10,406	89.15	10.85
April,	9,971	99.83	0.17	11,109	95.18	4.82
May,	9,751	97.63	2.37	10,469	89.69	10.31
June,	9,504	95.15	4.85	10,443	89.47	10.53
July,	9,473	94.84	5.16	11,064	94.79	5.21
August,	9,457	94.68	5.32	10,502	89.98	10.02
September,	9,511	95.22	4.78	11,201	95.96	4.04
October,	9,695	97.07	2.93	10,701	91.68	8.32
November,	9,657	96.69	3.31	10,863	93.07	6.93
December,	9,768	97.80	2.20	11,672	100.00	—
<i>Cotton Goods (Waste).</i>						
January,	382	94.32	5.68	415	92.22	7.78
February,	388	95.80	4.20	409	90.89	9.11
March,	391	96.54	3.46	423	94.00	6.00
April,	402	99.26	0.74	422	93.78	6.22
May,	402	99.26	0.74	424	94.22	5.78
June,	401	99.01	0.99	433	96.22	3.78
July,	393	97.04	2.96	450	100.00	—
August,	400	98.77	1.23	449	99.78	0.22
September,	392	96.79	3.21	440	97.78	2.22
October,	405	100.00	—	438	97.33	2.67
November,	381	94.07	5.93	440	97.78	2.22
December,	380	93.83	6.17	425	94.44	5.56
<i>Leather.</i>						
January,	5,419	94.19	5.81	5,271	85.48	14.52
February,	5,464	94.98	5.02	5,356	86.86	13.14
March,	5,753	100.00	—	5,579	90.48	9.52
April,	5,651	98.23	1.77	5,780	93.74	6.26
May,	5,449	94.72	5.28	5,707	92.56	7.44
June,	5,278	91.74	8.26	5,763	93.46	6.54
July,	5,206	90.49	9.51	5,693	92.33	7.67
August,	5,164	89.76	10.24	5,686	92.22	7.78
September,	5,246	91.19	8.81	6,017	97.58	2.42
October,	5,063	88.01	11.99	6,021	97.65	2.35
November,	5,083	88.35	11.65	6,143	99.63	0.37
December,	5,195	90.30	9.70	6,166	100.00	—

* These figures include the persons employed in Cotton Goods (Woven); Cotton Yarn and Thread; and Cotton Waste.

PERSONS EMPLOYED. AGGREGATES, BY MONTHS—1898, 1899
— Continued.

INDUSTRIES AND MONTHS.	1898			1899		
	Number of Persons Employed in Estab- lishments Con- sidered	PERCENTAGES OF —		Number of Persons Employed in Estab- lishments Con- sidered	PERCENTAGES OF —	
		Em- ployment	Unem- ployment		Em- ployment	Unem- ployment
<i>Machines and Machinery.</i>						
January,	16,642	91.55	8.45	19,120	80.65	19.35
February,	16,927	93.12	6.88	19,533	82.40	17.60
March,	17,161	94.41	5.59	20,553	86.70	13.30
April,	17,272	95.02	4.98	20,286	85.57	14.43
May,	17,026	93.66	6.34	20,689	87.27	12.73
June,	17,231	94.79	5.21	21,328	89.97	10.03
July,	17,257	94.93	5.07	21,647	91.31	8.69
August,	17,398	95.71	4.29	22,315	94.13	5.87
September,	17,652	97.11	2.89	22,886	96.54	3.46
October,	17,863	98.27	1.73	23,336	98.44	1.56
November,	17,953	98.76	1.24	23,507	99.16	0.84
December,	18,178	100.00	-	23,706	100.00	-
<i>Metals and Metallic Goods.</i>						
January,	13,546	95.67	4.33	14,182	88.48	11.52
February,	13,338	94.20	5.80	14,689	91.64	8.36
March,	13,588	95.97	4.03	15,084	94.10	5.90
April,	13,677	96.60	3.40	15,170	94.64	5.36
May,	13,397	94.62	5.38	15,158	94.57	5.43
June,	12,992	91.76	8.24	15,341	95.71	4.29
July,	12,567	88.76	11.24	14,928	93.13	6.87
August,	12,879	90.96	9.04	15,155	94.55	5.45
September,	13,350	94.29	5.71	15,609	97.38	2.62
October,	14,015	98.98	1.02	15,917	99.30	0.70
November,	14,159	100.00	-	15,972	99.64	0.36
December,	14,122	99.74	0.26	16,029	100.00	-
<i>Paper.</i>						
January,	8,934	98.09	1.91	9,109	97.80	2.20
February,	9,005	98.87	1.13	9,205	98.83	1.17
March,	9,040	99.25	0.75	9,220	98.99	1.01
April,	9,059	99.46	0.54	9,278	99.61	0.39
May,	9,071	99.59	0.41	9,314	100.00	-
June,	9,034	99.19	0.81	9,257	99.39	0.61
July,	8,598	94.40	5.60	9,181	98.57	1.43
August,	8,559	93.97	6.03	8,817	94.66	5.34
September,	8,833	96.98	3.02	8,918	95.75	4.25
October,	8,996	98.77	1.23	9,040	97.06	2.94
November,	9,108	100.00	-	9,224	99.03	0.97
December,	9,031	99.15	0.85	9,262	99.44	0.56
<i>Woollen Goods (Aggregates*).</i>						
January,	20,109	99.92	0.08	18,166	89.81	10.19
February,	20,068	99.71	0.29	18,892	93.40	6.60
March,	20,126	100.00	-	19,297	95.40	4.60
April,	20,018	99.46	0.54	19,577	96.79	3.21
May,	18,620	92.52	7.48	19,358	95.70	4.30
June,	18,731	93.07	6.93	18,802	92.95	7.05
July,	18,042	89.65	10.35	18,627	92.09	7.91
August,	18,459	91.72	8.28	18,305	90.50	9.50
September,	18,605	92.44	7.56	19,191	94.88	5.12
October,	18,943	94.12	5.88	19,898	98.37	1.63
November,	18,635	92.59	7.41	19,978	98.77	1.23
December,	18,831	93.57	6.43	20,227	100.00	-
<i>Woollen Goods (Woven Goods and Yarn).</i>						
January,	19,620	100.00	-	17,738	90.22	9.78
February,	19,546	99.62	0.38	18,414	93.66	6.34
March,	19,617	99.98	0.02	18,816	95.71	4.29
April,	19,552	99.65	0.35	19,090	97.10	2.90
May,	18,192	92.72	7.28	18,869	95.98	4.02
June,	18,299	93.27	6.73	18,303	93.10	6.90
July,	17,609	89.75	10.25	18,106	92.10	7.90
August,	17,990	91.69	8.31	17,733	90.20	9.80
September,	18,158	92.55	7.45	18,628	94.75	5.25
October,	18,523	94.41	5.59	19,379	98.57	1.43
November,	18,214	92.83	7.17	19,437	98.87	1.13
December,	18,381	93.69	6.31	19,660	100.00	-

* These figures include the persons employed in Woollen Goods (Woven Goods and Yarn) and Woollen Goods (Shoddy, Waste, etc.).

PERSONS EMPLOYED. AGGREGATES, BY MONTHS—1898, 1899
— Concluded.

INDUSTRIES AND MONTHS.	1898			1899		
	Number of Persons Employed in Estab- lishments Con- sidered	PERCENTAGES OF—		Number of Persons Employed in Estab- lishments Con- sidered	PERCENTAGES OF—	
		Em- ployment	Unem- ployment		Em- ployment	Unem- ployment
<i>Woollen Goods (Shoddy, Waste, etc.).</i>						
January,	489	93.68	6.32	428	74.83	25.17
February,	522	100.00	-	478	83.57	16.43
March,	509	97.51	2.49	481	84.00	15.91
April,	466	89.27	10.73	487	85.14	14.86
May,	428	81.99	18.01	489	85.49	14.51
June,	432	82.76	17.24	499	87.24	12.76
July,	433	82.95	17.05	521	91.08	8.92
August,	469	89.85	10.15	572	100.00	-
September,	447	85.63	14.37	563	98.43	1.57
October,	420	80.46	19.54	519	90.73	9.27
November,	421	80.65	19.35	541	94.58	5.42
December,	450	86.21	13.79	567	99.13	0.87
<i>Worsted Goods.</i>						
January,	13,968	95.98	4.02	14,042	89.13	10.87
February,	14,258	97.97	2.03	14,246	90.42	9.58
March,	14,553	100.00	-	14,470	91.84	8.16
April,	12,280	84.38	15.62	14,988	95.13	4.87
May,	10,738	73.79	26.21	15,384	97.65	2.35
June,	13,641	93.73	6.27	15,140	96.10	3.90
July,	13,653	93.82	6.18	14,957	94.93	5.07
August,	13,431	92.29	7.71	15,076	95.69	4.31
September,	11,370	78.13	21.87	15,427	97.92	2.08
October,	13,387	91.99	8.01	15,615	99.11	0.89
November,	13,804	94.85	5.15	15,755	100.00	-
December,	13,419	92.21	7.79	14,888	94.50	5.50
<i>ALL INDUSTRIES.</i>						
January,	327,161	97.04	2.96	343,586	92.37	7.63
February,	326,285	96.78	3.22	349,433	93.94	6.06
March,	332,732	98.69	1.31	357,336	96.07	3.93
April,	332,977	98.76	1.24	361,199	97.11	2.89
May,	325,379	96.51	3.49	361,669	97.23	2.77
June,	326,071	96.72	3.28	359,992	96.78	3.22
July,	321,846	95.46	4.54	356,977	95.97	4.03
August,	323,916	96.08	3.92	359,670	96.70	3.30
September,	326,456	96.83	3.17	366,766	98.60	1.40
October,	335,984	99.66	0.34	368,436	99.05	0.95
November,	335,584	99.54	0.46	371,958	100.00	-
December,	337,145	100.00	-	371,518	99.88	0.12

WAGES PAID: BY INDUSTRIES.

1898, 1899.

[In this presentation, the figures given under "Total Amount Paid in Wages During the Year" represent the returns made by the same establishments in each industry for the years 1898 and 1899. The relative increase or decrease in 1899 as compared with 1898 is given with its equivalent percentage. It should be borne in mind that these figures represent the sums paid to wage earners only and do not include amounts paid to officers, clerks, or other salaried persons.]

INDUSTRIES.	Number of Estab- lishments Con- sidered	TOTAL AMOUNT PAID IN WAGES DURING THE YEAR		INCREASE (+) OR DECREASE (-) IN 1899	
		1898	1899	Amounts	Percent- ages
Agricultural implements, . . .	9	\$296,810	\$315,660	+\$18,850	+6.35
Arms and ammunition, . . .	13	777,466	1,049,238	+271,772	+34.96
Artisans' tools, . . .	75	965,802	1,134,347	+168,545	+17.45
Awnings, sails, tents, etc., . .	44	135,123	143,657	+8,534	+6.32
Bicycles, tricycles, etc., . . .	21	1,175,286	1,142,383	-32,903	-2.80
Boots and shoes, . . .	688	23,797,338	26,286,669	+2,489,331	+10.46
Boots and shoes (factory product),	450	22,043,852	24,238,653	+2,194,801	+9.96
Soles, heels, and cut stock, . .	200	1,441,374	1,665,394	+224,020	+15.54
Boot and shoe findings, . . .	23	177,557	215,029	+37,472	+21.10
Stitching, heelings, etc., . . .	15	134,555	167,593	+33,038	+24.55
Boxes, barrels, kegs, etc., . . .	119	1,115,616	1,251,325	+135,709	+12.16
Boxes (paper), . . .	63	662,360	752,204	+89,844	+13.56
Brick, tiles, and sewer pipe, . .	67	553,538	553,629	+91	+0.02
Brooms, brushes, and mops, . .	22	278,748	328,006	+49,258	+17.67
Building materials, . . .	50	646,558	661,495	+14,937	+2.31
Burial cases, caskets, coffins, etc.,	6	107,860	101,181	-6,679	-6.19
Buttons and dress trimmings, . .	15	278,722	348,087	+69,365	+24.89
Carpets, . . .	12	1,451,921	1,702,290	+250,369	+18.88
Textile, . . .	8	1,353,398	1,622,675	+269,277	+19.90
Other, . . .	4	78,523	79,615	+1,092	+1.39
Carriages and wagons, . . .	128	1,114,786	1,182,545	+67,759	+6.08
Cement, kaolin, lime, and plaster, .	9	66,508	64,395	-2,113	-3.18
Chemical preparations (compound- ed), . . .	12	206,091	257,778	+51,687	+25.08
Clocks and watches, . . .	11	1,179,575	1,230,108	+50,533	+4.28
Clothing, . . .	146	3,289,998	3,436,520	+146,522	+4.45
Cooking, lighting, and heating ap- paratus, . . .	42	1,004,658	1,151,320	+146,662	+14.60
Cordage and twine, . . .	21	643,478	739,313	+95,835	+14.89
Cotton goods, . . .	158	20,116,007	29,371,656	+9,255,649	+46.02
Cotton goods (woven), . . .	115	22,802,849	25,722,067	+2,919,218	+12.80
Cotton yarn and thread, . . .	35	3,166,749	3,488,019	+321,270	+10.15
Cotton waste, . . .	8	146,409	161,570	+15,161	+10.36
Crayons, pencils, erucibles, etc., .	3	10,454	13,001	+2,547	+24.60
Drugs and medicines, . . .	24	239,980	264,017	+24,037	+10.02
Dyestuffs, . . .	6	59,862	66,091	+6,229	+10.41
Earthen, plaster, and stone ware, .	10	97,629	98,952	+1,323	+1.36
Electrical apparatus and appliances,	20	1,807,239	2,417,245	+610,006	+33.75
Electroplating, . . .	12	55,873	59,095	+3,222	+5.77
Emery and sand paper and cloth, etc.,	9	198,210	232,745	+34,535	+17.42
Fancy articles, etc., . . .	16	119,221	129,590	+10,369	+8.70
Fertilizers, . . .	6	108,668	107,587	-1,081	-0.99
Fine arts and taxidermy, . . .	3	10,325	10,228	-97	-0.94
Fireworks and matches, . . .	4	36,037	34,708	-1,329	-3.69
Flax, hemp, and jute goods, . . .	8	669,330	727,857	+58,527	+8.74

WAGES PAID: BY INDUSTRIES — 1898, 1899 — Concluded.

INDUSTRIES.	Number of Estab- lishments Con- sidered	TOTAL AMOUNT PAID IN WAGES DURING THE YEAR		INCREASE (+) OR DECREASE (—) IN 1899	
		1898	1899	Amounts	Percent- ages
Food preparations,	356	\$4,080,616	\$4,443,574	+\$362,958	+8.89
Furniture,	131	2,326,582	2,544,326	+217,744	+9.36
Glass,	14	139,859	146,030	+6,171	+4.41
Glue, isinglass, and starch, . . .	19	161,797	163,590	+1,793	+1.11
Hair work (animal and human), .	4	34,863	42,737	+7,874	+22.59
Hose: rubber, linen, etc., . . .	6	225,773	122,166	-103,607	-45.89
Hosiery and knit goods,	38	1,664,760	1,908,951	+244,191	+14.67
Ink, mucilage, and paste, . . .	7	35,896	37,904	+2,008	+5.59
Ivory, bone, shell, and horn goods, etc.,	21	360,933	438,538	+77,605	+21.50
Jewelry,	90	1,872,965	2,383,500	+510,535	+27.26
Leather,	96	2,482,430	2,713,878	+231,448	+9.32
Leather goods,	26	291,920	370,082	+78,162	+26.78
Liquors (bottled) and carbonated beverages,	33	177,638	170,423	-7,215	-4.06
Liquors (malt),	34	1,217,445	1,200,966	-16,479	-1.35
Liquors (distilled),	5	15,440	15,976	+536	+3.47
Lumber,	25	298,375	374,637	+76,262	+25.56
Machines and machinery, . . .	358	9,582,762	11,968,298	+2,385,536	+24.89
Metals and metallic goods, . . .	393	6,822,620	7,815,634	+993,014	+14.55
Models, lasts, and patterns, . .	47	381,145	420,013	+38,868	+10.20
Musical instruments and materials,	55	1,436,508	1,802,373	+365,865	+25.47
Oils and illuminating fluids, . .	10	72,214	77,112	+4,898	+6.78
Paints, colors, and crude chemicals,	28	140,258	143,100	+2,842	+2.03
Paper,	80	3,783,139	3,947,134	+163,995	+4.33
Paper goods,	41	1,084,203	1,149,215	+64,922	+5.99
Perfumes, toilet articles, etc., .	6	9,922	10,304	+382	+3.85
Photographs and photographic ma- terials,	21	134,594	127,792	-6,802	-5.05
Polishes and dressing,	31	111,598	119,535	+7,937	+7.11
Printing, publishing, and bookbind- ing,	62	2,150,690	2,408,957	+258,267	+12.01
Print works, dye works, and bleach- eries,	49	2,638,689	2,904,306	+265,617	+10.07
Railroad construction and equip- ment,	16	1,244,389	1,484,375	+239,986	+19.29
Rubber and elastic goods, . . .	46	4,075,546	4,031,395	-44,151	-1.08
Saddlery and harness,	32	202,119	248,500	+46,381	+22.95
Scientific instruments and appli- ances,	22	627,560	690,570	+63,010	+10.04
Shipbuilding,	49	497,927	742,725	+244,798	+49.16
Silk and silk goods,	11	891,204	1,034,744	+143,540	+16.11
Sporting and athletic goods, . .	7	99,790	123,955	+24,165	+24.22
Stone,	196	2,060,383	2,029,483	-30,900	-1.50
Quarried,	45	956,196	853,989	-102,207	-10.69
Cut and monumental,	151	1,104,187	1,175,494	+71,307	+6.46
Straw and palm leaf goods, . . .	17	1,206,137	1,166,589	-39,548	-3.28
Tallow, candles, soap, and grease, .	61	358,725	390,040	+31,315	+8.73
Tobacco, snuff, and cigars, . . .	73	1,228,630	1,343,691	+115,061	+9.36
Toys and games (children's), . . .	12	206,142	217,498	+11,356	+5.51
Trunks and valises,	7	36,249	37,882	+1,633	+4.50
Whips, lashes, and stocks, . . .	11	174,363	223,833	+49,470	+28.37
Wooden goods,	70	593,525	661,030	+67,505	+11.37
Woollen goods,	138	7,685,432	7,200,777	-484,655	-6.32
Woven goods and yarn,	119	6,894,127	6,969,199	+75,072	+1.09
Shoddy, waste, etc.,	19	191,305	231,578	+40,273	+21.05
Worsted goods,	34	4,778,279	5,442,321	+664,042	+13.90
ALL INDUSTRIES,	4,740	\$138,349,181	\$154,415,381	+\$16,066,200	+11.61

AVERAGE YEARLY EARNINGS: BY INDUSTRIES.

1898, 1899.

[The average yearly earnings shown in this presentation have been obtained by dividing the total amount paid in wages during the years 1898 and 1899 (pages 117 and 118) by the number representing the average number of persons employed during the same years (pages 104 and 105). The relative increase or decrease in 1899 as compared with 1898 is given with its equivalent percentage. It should be borne in mind that these figures represent the sums paid to wage earners only and do not include amounts paid to officers, clerks, or other salaried persons.]

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE YEARLY EARNINGS		INCREASE (+) OR DECREASE (-) IN 1899	
		1898	1899	Amounts	Percent- ages
Agricultural implements,	9	\$484.19	\$485.63	+\$1.44	+0.30
Arms and ammunition,	13	492.07	482.19	- 9.88	-2.01
Artisans' tools,	75	526.04	543.53	+17.49	+3.32
Awnings, sails, tents, etc.,	44	525.77	513.06	-12.71	-2.42
Bicycles, tricycles, etc.,	21	539.62	587.95	+48.33	+8.96
Boots and shoes,	688	460.10	469.04	+8.94	+1.94
Boots and shoes (factory product),	450	469.69	479.67	+9.98	+2.12
Soles, heels, and cut stock,	200	364.72	368.94	+4.22	+1.16
Boot and shoe findings,	23	372.24	383.22	+9.98	+2.42
Stitching, heelings, etc.,	15	373.76	413.31	+40.05	+10.72
Boxes, barrels, kegs, etc.,	119	425.97	433.13	+7.16	+1.68
Boxes (paper),	63	330.52	335.81	+5.29	+1.60
Brick, tiles, and sewer pipe,	67	402.57	433.20	+30.63	+7.61
Brooms, brushes, and mops,	22	351.07	359.26	+8.19	+2.33
Building materials,	50	609.39	590.09	-19.30	-3.17
Burial cases, caskets, coffins, etc.,	6	602.57	578.13	-24.39	-4.05
Buttons and dress trimmings,	15	322.97	338.94	+15.97	+4.94
Carpentering,	12	340.69	373.06	+32.37	+9.50
Textile,	8	336.42	372.51	+36.09	+10.73
Other,	4	436.24	384.61	-51.63	-11.84
Carriages and wagons,	128	587.63	583.40	-4.26	-0.72
Cement, kaolin, lime, and plaster,	9	438.05	477.00	+38.95	+8.89
Chemical preparations (compounded),	12	572.48	549.63	-22.85	-3.99
Clocks and watches,	11	503.45	505.18	+1.73	+0.34
Clothing,	146	371.16	367.58	-3.58	-0.96
Cooking, lighting, and heating apparatus,	42	597.30	614.04	+16.74	+2.80
Cordage and twine,	21	329.82	332.72	+2.90	+0.88
Cotton goods,	158	322.99	331.92	+8.93	+2.76
Cotton goods (woven),	115	322.23	332.75	+10.52	+3.27
Cotton yarn and thread,	35	326.54	324.23	-2.31	-0.71
Cotton waste,	8	370.66	375.74	+5.08	+1.37
Crayons, pencils, crucibles, etc.,	3	549.16	590.95	+41.79	+7.61
Drugs and medicines,	24	415.19	401.85	-13.34	-3.21
Dyestuffs,	6	456.96	524.53	+67.57	+14.79
Earthen, plaster, and stone ware,	10	442.77	480.35	+36.58	+8.24
Electrical apparatus and appliances,	20	523.23	538.36	+15.13	+2.89
Electroplating,	12	494.45	496.60	+2.15	+0.43
Emery and sand paper and cloth, etc.,	9	531.37	540.01	+8.64	+1.63
Fancy articles, etc.,	16	362.37	349.85	-12.52	-3.46
Fertilizers,	6	532.69	493.52	-39.17	-7.35
Fine arts and taxidermy,	3	607.35	538.32	-69.03	-11.37
Fireworks and matches,	4	400.41	408.33	+7.92	+1.98
Flax, hemp, and jute goods,	8	300.96	314.00	+13.04	+4.33

AVERAGE YEARLY EARNINGS: BY INDUSTRIES—1898, 1899

—Concluded.

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE YEARLY EARNINGS		INCREASE (+) OR DECREASE (—) IN 1899	
		1898	1899	Amounts	Percent- ages
Food preparations,	356	\$439.67	\$441.31	+\$1.64	+0.37
Furniture,	131	471.54	480.51	+8.97	+1.90
Glass,	14	535.86	507.05	—28.81	—5.38
Glue, isinglass, and starch,	19	440.86	432.78	—8.08	—1.83
Hair work (animal and human),	4	335.22	381.58	+46.36	+13.83
Hose: rubber, linen, etc.,	6	448.85	356.17	—92.68	—20.65
Hosiery and knit goods,	38	304.29	314.39	+10.10	+3.32
Ink, mucilage, and paste,	7	527.88	445.93	—81.95	—15.52
Ivory, bone, shell, and horn goods, etc.,	21	406.46	424.53	+18.07	+4.45
Jewelry,	90	477.92	488.42	+10.50	+2.20
Leather,	96	465.22	470.42	+5.20	+1.11
Leather goods,	26	462.63	473.86	+11.23	+2.43
Liquors (bottled) and carbonated beverages,	33	576.75	547.98	—28.77	—4.99
Liquors (malt),	34	795.20	795.87	+0.67	+0.08
Liquors (distilled),	5	735.24	694.61	—40.63	—5.53
Lumber,	25	460.46	477.85	+17.39	+3.78
Machines and machinery,	358	550.54	554.27	+3.73	+0.68
Metals and metallic goods,	393	505.75	510.89	+5.14	+1.02
Models, lasts, and patterns,	47	692.99	705.90	+12.91	+1.86
Musical instruments and materials,	55	568.69	578.98	+10.29	+1.81
Oils and illuminating fluids,	10	519.53	514.08	—5.45	—1.05
Paints, colors, and crude chemicals,	28	545.75	540.00	—5.75	—1.05
Paper,	80	423.08	431.19	+8.11	+1.92
Paper goods,	41	367.68	372.40	+4.72	+1.28
Perfumes, toilet articles, etc.,	6	396.88	381.63	—15.25	—3.84
Photographs and photographic materials,	21	577.66	588.90	+11.24	+1.95
Polishes and dressing,	31	435.93	437.86	+1.93	+0.44
Printing, publishing, and bookbinding,	62	511.83	518.61	+6.78	+1.32
Print works, dye works, and bleacheries,	49	441.25	438.98	—2.27	—0.51
Railroad construction and equipment,	16	570.30	533.95	—36.35	—6.37
Rubber and elastic goods,	46	428.64	427.01	—1.63	—0.38
Saddlery and harness,	32	502.78	518.79	+16.01	+3.18
Scientific instruments and appliances,	22	440.08	439.85	—0.23	—0.05
Shipbuilding,	49	628.70	635.89	+7.19	+1.14
Silk and silk goods,	11	352.39	366.93	+14.54	+4.13
Sporting and athletic goods,	7	501.46	505.94	+4.48	+0.89
Stone,	196	501.92	516.01	+14.09	+2.81
Quarried,	45	433.45	444.55	+11.10	+2.56
Cut and monumental,	151	581.46	584.24	+2.78	+0.48
Straw and palm leaf goods,	17	458.43	453.75	—4.68	—1.02
Tallow, candles, soap, and grease,	61	491.40	495.60	+4.20	+0.85
Tobacco, snuff, and cigars,	73	598.75	616.94	+18.19	+3.04
Toys and games (children's),	12	406.59	376.29	—30.30	—7.45
Trunks and valises,	7	496.56	473.53	—23.03	—4.64
Whips, lashes, and stocks,	11	412.21	399.70	—12.51	—3.03
Wooden goods,	70	464.05	475.22	+11.17	+2.41
Woollen goods,	138	370.73	374.92	+4.19	+1.13
Woven goods and yarn,	119	369.60	372.82	+3.22	+0.87
Shoddy, waste, etc.,	19	416.79	451.42	+34.63	+8.31
Worsted goods,	34	361.69	362.75	+1.06	+0.29
ALL INDUSTRIES,	4,740	\$419.91	\$427.71	+\$7.80	+1.86

CLASSIFIED WEEKLY EARNINGS: BY SELECTED INDUSTRIES.

1898, 1899.

[In this presentation is shown for the nine leading industries and for All Industries for the years 1898 and 1899, a classification by sex of the weekly earnings, ranging from under \$5 per week to \$20 and over. The returns were made by manufacturers to cover the week during which the largest number of persons was employed. It should be borne in mind that these figures represent wage earners only; officers, clerks, or other salaried persons are not included.]

INDUSTRIES AND CLASSIFICATION OF WEEKLY EARNINGS.	1898			1899			
	Males	Females	Both Sexes	ADULTS (21 YEARS OF AGE AND OVER)		Young Persons (under 21 Years of Age)	Both Sexes
				Males	Females		
<i>Boots and Shoes (Aggregates*)</i>	41,556	19,722	61,278	40,701	17,468	7,982	66,151
Under \$5,	3,189	4,340	7,529	1,486	2,491	3,740	7,717
\$5 but under \$6,	2,041	2,246	4,287	1,235	1,680	1,494	4,409
\$6 but under \$7,	2,359	2,524	4,883	1,795	2,131	1,230	5,156
\$7 but under \$8,	2,895	2,377	5,272	2,436	2,212	817	5,465
\$8 but under \$9,	3,069	2,013	5,082	2,942	2,024	361	5,327
\$9 but under \$10,	3,957	1,980	5,937	4,566	2,188	214	6,968
\$10 but under \$12,	6,737	2,226	8,963	7,043	2,414	90	9,547
\$12 but under \$15,	8,488	1,565	10,053	9,453	1,715	31	11,199
\$15 but under \$20,	6,524	409	6,933	7,229	571	5	7,805
\$20 and over,	2,297	42	2,339	2,516	42	-	2,558
<i>Boots and Shoes (Factory Prod- uct).</i>	37,957	17,653	55,610	37,300	15,801	6,472	59,573
Under \$5,	2,737	3,452	6,189	1,333	1,978	2,869	6,180
\$5 but under \$6,	1,777	1,855	3,632	1,102	1,362	1,243	3,707
\$6 but under \$7,	2,046	2,154	4,200	1,533	1,775	1,018	4,346
\$7 but under \$8,	2,526	2,231	4,757	2,117	2,037	719	4,873
\$8 but under \$9,	2,777	1,919	4,696	2,627	1,902	320	4,849
\$9 but under \$10,	3,485	1,906	5,391	4,011	2,114	180	6,305
\$10 but under \$12,	6,137	2,160	8,297	6,400	2,345	87	8,832
\$12 but under \$15,	7,904	1,531	9,435	8,718	1,681	31	10,430
\$15 but under \$20,	6,315	403	6,718	6,973	566	5	7,544
\$20 and over,	2,253	42	2,295	2,466	41	-	2,507
<i>Boots and Shoes (Soles, Heels, and Cut Stock).</i>	3,131	1,527	4,658	2,862	1,170	1,324	5,356
Under \$5,	409	715	1,124	126	385	740	1,251
\$5 but under \$6,	244	310	554	124	217	217	558
\$6 but under \$7,	294	294	588	219	288	196	703
\$7 but under \$8,	318	103	421	270	133	93	496
\$8 but under \$9,	251	47	298	268	64	41	373
\$9 but under \$10,	417	29	446	493	40	34	567
\$10 but under \$12,	510	24	534	545	36	3	584
\$12 but under \$15,	501	4	505	610	6	-	616
\$15 but under \$20,	154	1	155	179	1	-	180
\$20 and over,	33	-	33	28	-	-	28

* These figures include persons employed in Boots and Shoes (Factory Product); Soles, Heels, and Cut Stock; Findings; and Stitching, Heeling, etc.

CLASSIFIED WEEKLY EARNINGS: BY SELECTED INDUSTRIES —
1898, 1899 — Continued.

INDUSTRIES AND CLASSIFICATION OF WEEKLY EARNINGS.	1898			1899			
	Males	Females	Both Sexes	ADULTS (21 YEARS OF AGE AND OVER)		Young Persons (under 21 Years of Age)	Both Sexes
				Males	Females		
<i>Boots and Shoes (Findings).</i>	291	268	559	303	267	149	719
Under \$5,	38	120	158	26	87	107	220
\$5 but under \$6,	19	60	79	9	87	30	126
\$6 but under \$7,	18	50	68	18	41	11	70
\$7 but under \$8,	29	9	38	36	14	1	51
\$8 but under \$9,	16	8	24	32	17	—	49
\$9 but under \$10,	28	7	35	29	6	—	35
\$10 but under \$12,	49	9	58	49	6	—	55
\$12 but under \$15,	50	4	54	60	5	—	65
\$15 but under \$20,	35	1	36	33	3	—	36
\$20 and over,	9	—	9	11	1	—	12
<i>Boots and Shoes (Stitching, Heeling, etc.).</i>	177	274	451	236	230	37	503
Under \$5,	5	53	58	1	41	24	66
\$5 but under \$6,	1	21	22	—	14	4	18
\$6 but under \$7,	1	26	27	5	27	5	37
\$7 but under \$8,	22	34	56	13	28	4	45
\$8 but under \$9,	25	39	64	15	41	—	56
\$9 but under \$10,	27	38	65	33	28	—	61
\$10 but under \$12,	41	33	74	49	27	—	76
\$12 but under \$15,	33	26	59	65	23	—	88
\$15 but under \$20,	20	4	24	44	1	—	45
\$20 and over,	2	—	2	11	—	—	11
<i>Carpetings (Aggregates*).</i>	2,369	2,506	4,875	2,131	1,948	818	4,897
Under \$5,	436	782	1,218	191	268	477	936
\$5 but under \$6,	168	450	618	115	475	175	765
\$6 but under \$7,	206	312	518	216	277	51	544
\$7 but under \$8,	236	409	645	216	266	62	544
\$8 but under \$9,	222	205	427	273	199	24	496
\$9 but under \$10,	277	126	403	251	286	24	561
\$10 but under \$12,	311	189	500	323	153	2	478
\$12 but under \$15,	271	33	304	319	24	1	344
\$15 but under \$20,	168	—	168	171	—	2	173
\$20 and over,	74	—	74	56	—	—	56
<i>Carpetings (Textile).</i>	2,251	2,399	4,650	2,034	1,881	748	4,663
Under \$5,	434	755	1,189	191	258	460	909
\$5 but under \$6,	156	392	548	107	422	134	663
\$6 but under \$7,	199	307	506	214	274	44	532
\$7 but under \$8,	231	400	631	207	265	59	531
\$8 but under \$9,	201	201	402	270	199	22	491
\$9 but under \$10,	242	122	364	209	286	24	519
\$10 but under \$12,	294	189	483	308	153	2	463
\$12 but under \$15,	259	33	292	309	24	1	334
\$15 but under \$20,	162	—	162	164	—	2	166
\$20 and over,	73	—	73	55	—	—	55
<i>Carpetings (Other).</i>	118	107	225	97	67	70	234
Under \$5,	2	27	29	—	10	17	27
\$5 but under \$6,	12	58	70	8	53	41	102
\$6 but under \$7,	7	5	12	2	3	7	12
\$7 but under \$8,	5	9	14	9	1	3	13
\$8 but under \$9,	21	4	25	3	—	2	5
\$9 but under \$10,	35	4	39	42	—	—	42
\$10 but under \$12,	17	—	17	15	—	—	15
\$12 but under \$15,	12	—	12	10	—	—	10
\$15 but under \$20,	6	—	6	7	—	—	7
\$20 and over,	1	—	1	1	—	—	1

* These figures include the persons employed in Carpetings (Textile) and Carpetings (Other).

CLASSIFIED WEEKLY EARNINGS: BY SELECTED INDUSTRIES—
1898, 1899—Continued.

INDUSTRIES AND CLASSIFICATION OF WEEKLY EARNINGS.	1898			1899			
	Males	Females	Both Sexes	ADULTS (21 YEARS OF AGE AND OVER)		Young Persons (under 21 Years of Age)	Both Sexes
				Males	Females		
<i>Cotton Goods (Aggregates*).</i>	44,950	42,685	87,635	39,621	32,999	19,134	91,754
Under \$5,	9,311	14,111	23,422	3,835	6,717	10,412	20,964
\$5 but under \$6,	6,112	9,453	15,565	3,640	6,103	4,783	14,526
\$6 but under \$7,	7,585	8,210	15,795	6,860	7,149	2,568	16,577
\$7 but under \$8,	6,143	6,243	12,386	5,860	6,092	959	12,911
\$8 but under \$9,	4,966	3,393	8,359	5,395	4,222	236	9,553
\$9 but under \$10,	3,438	886	4,324	4,459	1,981	142	6,582
\$10 but under \$12,	3,802	354	4,156	4,626	626	31	5,283
\$12 but under \$15,	2,118	31	2,149	2,982	95	2	3,079
\$15 but under \$20,	874	4	878	1,278	13	1	1,292
\$20 and over,	601	—	601	686	1	—	687
<i>Cotton Goods (Woven).</i>	39,820	37,319	77,139	35,420	29,147	15,512	80,079
Under \$5,	8,127	12,581	20,708	3,642	6,132	8,800	18,574
\$5 but under \$6,	5,480	8,193	13,673	3,393	5,397	3,885	12,675
\$6 but under \$7,	6,832	6,913	13,745	6,110	6,111	1,768	13,989
\$7 but under \$8,	5,562	5,519	11,081	5,195	5,291	733	11,219
\$8 but under \$9,	4,656	3,042	7,698	5,012	3,773	186	8,971
\$9 but under \$10,	3,012	742	3,754	3,898	1,797	124	5,819
\$10 but under \$12,	3,402	300	3,702	4,181	565	13	4,759
\$12 but under \$15,	1,626	26	1,652	2,472	75	2	2,549
\$15 but under \$20,	640	3	643	931	5	1	937
\$20 and over,	483	—	483	586	1	—	587
<i>Cotton Goods (Cotton Yarn and Thread).</i>	4,849	5,227	10,076	3,887	3,730	3,601	11,218
Under \$5,	1,180	1,455	2,635	192	520	1,601	2,313
\$5 but under \$6,	632	1,208	1,840	244	665	891	1,800
\$6 but under \$7,	716	1,293	2,009	707	1,029	800	2,536
\$7 but under \$8,	526	716	1,242	616	794	223	1,633
\$8 but under \$9,	287	351	638	354	449	50	853
\$9 but under \$10,	324	144	468	432	184	18	634
\$10 but under \$12,	373	54	427	419	61	18	498
\$12 but under \$15,	477	5	482	496	20	—	516
\$15 but under \$20,	218	1	219	330	8	—	338
\$20 and over,	116	—	116	97	—	—	97
<i>Cotton Goods (Waste).</i>	281	139	420	314	122	21	457
Under \$5,	4	75	79	1	65	11	77
\$5 but under \$6,	—	52	52	3	41	7	51
\$6 but under \$7,	37	4	41	43	9	—	52
\$7 but under \$8,	55	8	63	49	7	3	59
\$8 but under \$9,	23	—	23	29	—	—	29
\$9 but under \$10,	102	—	102	129	—	—	129
\$10 but under \$12,	27	—	27	26	—	—	26
\$12 but under \$15,	15	—	15	14	—	—	14
\$15 but under \$20,	16	—	16	17	—	—	17
\$20 and over,	2	—	2	3	—	—	3
<i>Leather.</i>	6,371	36	6,407	6,548	37	251	6,836
Under \$5,	161	3	164	81	—	53	134
\$5 but under \$6,	229	9	238	165	7	78	250
\$6 but under \$7,	410	21	431	456	23	67	546
\$7 but under \$8,	622	1	623	737	4	39	780
\$8 but under \$9,	827	1	828	720	2	4	726
\$9 but under \$10,	1,603	—	1,603	1,688	—	9	1,697
\$10 but under \$12,	1,284	—	1,284	1,439	—	—	1,439
\$12 but under \$15,	798	1	799	772	1	1	774
\$15 but under \$20,	353	—	353	402	—	—	402
\$20 and over,	84	—	84	88	—	—	88

* These figures include the persons employed in Cotton Goods (Woven); Cotton Yarn, and Thread; and Cotton Waste.

CLASSIFIED WEEKLY EARNINGS: BY SELECTED INDUSTRIES —
1898, 1899 — Continued.

INDUSTRIES AND CLASSIFICATION OF WEEKLY EARNINGS.	1898			1899			
	Males	Females	Both Sexes	ADULTS (21 YEARS OF AGE AND OVER)		Young Persons (under 21 Years of Age)	Both Sexes
				Males	Females		
<i>Machines and Machinery.</i>	20,012	312	20,324	23,815	253	1,941	26,009
Under \$5,	1,085	87	1,172	661	42	819	1,522
\$5 but under \$6,	984	40	1,024	518	49	355	922
\$6 but under \$7,	1,004	73	1,077	817	50	416	1,283
\$7 but under \$8,	1,435	52	1,487	1,766	48	267	2,081
\$8 but under \$9,	1,352	30	1,382	1,967	39	47	2,053
\$9 but under \$10,	2,505	24	2,529	3,504	19	23	3,546
\$10 but under \$12,	2,868	4	2,872	3,758	5	11	3,774
\$12 but under \$15,	4,639	—	4,639	5,412	—	3	5,415
\$15 but under \$20,	3,499	2	3,501	4,563	1	—	4,564
\$20 and over,	641	—	641	849	—	—	849
<i>Metals and Metallic Goods.</i>	14,186	1,786	15,972	14,393	1,242	2,103	17,738
Under \$5,	973	502	1,475	301	249	980	1,530
\$5 but under \$6,	615	405	1,020	296	191	453	940
\$6 but under \$7,	935	492	1,427	702	418	391	1,511
\$7 but under \$8,	1,025	201	1,226	1,096	164	166	1,426
\$8 but under \$9,	931	96	1,027	1,075	95	41	1,211
\$9 but under \$10,	1,869	41	1,910	2,162	62	51	2,275
\$10 but under \$12,	2,176	36	2,212	2,497	40	14	2,551
\$12 but under \$15,	2,664	8	2,672	2,661	20	7	2,688
\$15 but under \$20,	2,304	2	2,306	2,842	2	—	2,844
\$20 and over,	694	3	697	761	1	—	762
<i>Paper.</i>	5,677	3,710	9,387	5,758	3,506	595	9,859
Under \$5,	146	856	1,002	78	822	222	1,122
\$5 but under \$6,	98	1,053	1,151	86	958	124	1,168
\$6 but under \$7,	241	1,139	1,380	172	1,046	154	1,372
\$7 but under \$8,	583	369	952	660	378	67	1,105
\$8 but under \$9,	688	189	877	682	182	9	873
\$9 but under \$10,	1,452	68	1,520	1,574	83	17	1,674
\$10 but under \$12,	791	18	809	807	19	1	827
\$12 but under \$15,	878	13	891	869	12	1	882
\$15 but under \$20,	649	5	654	673	6	—	679
\$20 and over,	151	—	151	157	—	—	157
<i>Woollen Goods (Aggregates*).</i>	13,603	7,702	21,305	12,533	6,223	2,930	21,686
Under \$5,	1,271	1,935	3,206	596	887	1,603	3,086
\$5 but under \$6,	1,088	1,385	2,473	712	894	708	2,314
\$6 but under \$7,	2,052	1,480	3,532	1,610	1,411	365	3,386
\$7 but under \$8,	2,378	1,262	3,640	2,299	1,275	156	3,730
\$8 but under \$9,	1,618	830	2,448	1,885	936	65	2,886
\$9 but under \$10,	1,784	477	2,261	1,753	407	21	2,181
\$10 but under \$12,	1,675	258	1,933	1,803	339	9	2,151
\$12 but under \$15,	1,056	71	1,127	1,140	71	3	1,214
\$15 but under \$20,	471	4	475	489	3	—	492
\$20 and over,	210	—	210	246	—	—	246
<i>Woollen Goods (Woven Goods and Yarn).</i>	13,107	7,641	20,748	11,968	6,164	2,921	21,053
Under \$5,	1,269	1,921	3,190	582	872	1,508	3,052
\$5 but under \$6,	1,074	1,373	2,447	700	882	708	2,290
\$6 but under \$7,	2,024	1,451	3,475	1,596	1,385	363	3,344
\$7 but under \$8,	2,301	1,258	3,559	2,215	1,271	154	3,640
\$8 but under \$9,	1,593	830	2,423	1,854	936	65	2,855
\$9 but under \$10,	1,608	477	2,085	1,530	407	21	1,958
\$10 but under \$12,	1,627	257	1,884	1,747	338	9	2,094
\$12 but under \$15,	956	70	1,026	1,041	70	3	1,114
\$15 but under \$20,	450	4	454	466	3	—	469
\$20 and over,	205	—	205	237	—	—	237

* These figures include the persons employed in Woollen Goods (Woven Goods and Yarn) and Shoddy, Waste, etc.

CLASSIFIED WEEKLY EARNINGS: BY SELECTED INDUSTRIES—
1898, 1899—Concluded.

INDUSTRIES AND CLASSIFICATION OF WEEKLY EARNINGS.	1898			1899			
	Males	Females	Both Sexes	ADULTS (21 YEARS OF AGE AND OVER)		Young Persons (under 21 Years of Age)	Both Sexes
				Males	Females		
<i>Woollen Goods (Shoddy, Waste, etc.).</i>	496	61	557	565	59	9	633
Under \$5,	2	14	16	14	15	5	34
\$5 but under \$6,	14	12	26	12	12	—	24
\$6 but under \$7,	28	29	57	14	26	2	42
\$7 but under \$8,	77	4	81	84	4	2	90
\$8 but under \$9,	25	—	25	31	—	—	31
\$9 but under \$10,	176	—	176	223	—	—	223
\$10 but under \$12,	48	1	49	56	1	—	57
\$12 but under \$15,	100	1	101	99	1	—	100
\$15 but under \$20,	21	—	21	23	—	—	23
\$20 and over,	5	—	5	9	—	—	9
<i>Worsted Goods.</i>	8,116	6,951	15,067	7,169	4,980	4,581	16,730
Under \$5,	881	1,782	2,663	240	556	1,774	2,570
\$5 but under \$6,	844	1,823	2,667	493	1,334	1,358	3,185
\$6 but under \$7,	1,393	1,770	3,163	849	1,501	1,145	3,495
\$7 but under \$8,	1,396	712	2,078	1,445	633	245	2,323
\$8 but under \$9,	657	407	1,064	795	359	24	1,178
\$9 but under \$10,	816	223	1,039	802	260	22	1,084
\$10 but under \$12,	973	173	1,146	1,148	256	9	1,413
\$12 but under \$15,	807	50	857	976	54	4	1,034
\$15 but under \$20,	246	10	256	285	25	—	310
\$20 and over,	133	1	134	136	2	—	138
ALL INDUSTRIES.	251,076	129,508	380,584	245,365	104,910	60,742	411,017
Under \$5,	23,439	37,651	61,090	9,608	18,722	31,181	59,511
\$5 but under \$6,	15,700	24,411	40,111	9,438	17,490	13,633	40,561
\$6 but under \$7,	21,776	23,403	45,179	18,038	21,038	8,954	48,030
\$7 but under \$8,	24,120	17,037	41,157	23,409	16,479	4,092	43,980
\$8 but under \$9,	22,607	11,139	33,746	24,009	12,355	1,390	37,734
\$9 but under \$10,	30,259	6,608	36,867	34,349	8,342	864	43,555
\$10 but under \$12,	34,829	5,534	40,363	38,624	6,196	472	45,292
\$12 but under \$15,	39,479	2,866	42,345	43,690	3,212	133	47,035
\$15 but under \$20,	29,561	750	30,311	33,580	969	22	34,571
\$20 and over,	9,306	109	9,415	10,620	127	1	10,748

Analysis.

From the first presentation on pages 102 and 103, we learn that in 1898 the average number of males employed in the 4,740 establishments was 216,430 and the average number of females, 113,044. In 1899, the males numbered 239,366 and the females 121,665. Selecting the nine leading industries for analysis and considering the employment of males only, we secure the following table :

INDUSTRIES.	Number of Estab-lishments Con-sidered	AVERAGE NUMBER OF MALES EMPLOYED		INCREASE IN 1899	
		1898	1899	Number	Percent-ages
Boots and shoes,	688	35,483	38,686	3,203	9.03
Carpetings,	12	2,127	2,295	168	7.90
Cotton goods,	158	41,057	45,809	4,752	11.57
Leather,	96	5,311	5,728	417	7.85
Machines and machinery,	358	17,138	21,303	4,165	24.30
Metals and metallic goods,	393	11,978	13,697	1,719	14.35
Paper,	80	5,429	5,588	159	2.93
Woollen goods,	138	12,186	12,235	49	0.40
Worsted goods,	34	7,069	7,829	760	10.75
Nine industries,	1,957	137,778	153,170	15,392	11.17
Other industries,	2,783	78,652	86,196	7,544	9.59
All industries,	4,740	216,430	239,366	22,936	10.60

The highest percentage of increase, so far as the nine leading industries are concerned, is found in Machines and Machinery, namely, 24.30 ; the largest numerical increase is found in Cotton Goods, the number being 4,752. The next highest percentage of increase, 14.35, is found in Metals and Metallic Goods. Cotton Goods follows, in which the percentage of increase is 11.57, and is in turn followed by Worsted Goods, with an increase of 10.75 per cent. In each of these instances the percentage of increase is greater than that shown for All Industries. The smallest percentage of increase, 0.40, is found in Woollen Goods in which industry is also noted the lowest numerical increase.

The next table exhibits for the same industries the increase in the average number of females employed in the 4,740 establishments.

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE NUMBER OF FEMALES EMPLOYED		INCREASE IN 1899	
		1898	1899	Number	Percent- ages
Boots and shoes,	688	16,239	17,357	1,118	6.88
Carpetings,	12	2,076	2,268	192	9.25
Cotton goods,	158	39,801	42,681	2,880	7.24
Leather,	96	25	41	16	64.00
Machines and machinery,	358	268	290	22	8.21
Metals and metallic goods,	393	1,512	1,601	89	5.89
Paper,	80	3,513	3,566	53	1.51
Woollen goods,	138	6,926	6,971	45	0.65
Worsted goods,	34	6,142	7,174	1,032	16.80
Nine industries,	1,957	76,502	81,949	5,447	7.12
Other industries,	2,783	36,542	39,716	3,174	8.69
All industries,	4,740	113,044	121,665	8,621	7.63

In this table, the highest percentage of increase, 64, is found in Leather, and the largest numerical increase in Cotton Goods, the number being 2,880. The smallest percentage of increase, 0.65, is found in Woollen Goods. For All Industries, the average number of females employed increased 8,621, a gain of 7.63 per cent in 1899 as against 1898.

In the next table we show the relative proportions of the sexes employed in each of the nine leading industries, in the other industries, and in All Industries for 1898 and 1899, in comparison with similar percentages obtained in the Census years 1875, 1885, and 1895.

INDUSTRIES AND SEX.	PERCENTAGES				
	1875	1885	1895	1898	1899
<i>Boots and Shoes.</i>	100.00	100.00	100.00	100.00	100.00
Males,	76.45	69.46	69.35	68.60	69.03
Females,	23.55	30.54	30.65	31.40	30.97
<i>Carpetings.</i>	100.00	100.00	100.00	100.00	100.00
Males,	43.25	42.12	47.79	50.61	50.30
Females,	56.75	57.88	52.21	49.39	49.70
<i>Cotton Goods.</i>	100.00	100.00	100.00	100.00	100.00
Males,	41.24	44.96	49.55	50.78	51.77
Females,	58.76	55.04	50.45	49.22	48.23

INDUSTRIES AND SEX.	PERCENTAGES				
	1875	1885	1895	1898	1899
<i>Leather.</i>	*100.00	*100.00	*100.00	100.00	100.00
Males,	96.59	97.85	95.70	99.53	99.29
Females,	3.41	2.15	4.30	0.47	0.71
<i>Machines and Machinery.</i>	100.00	100.00	100.00	100.00	100.00
Males,	97.36	98.57	98.32	98.46	98.66
Females,	2.64	1.43	1.68	1.54	1.34
<i>Metals and Metallic Goods.</i>	100.00	100.00	100.00	100.00	100.00
Males,	91.98	90.95	91.99	88.79	89.53
Females,	8.02	9.05	8.01	11.21	10.47
<i>Paper.</i>	†100.00	†100.00	†100.00	100.00	100.00
Males,	42.51	56.08	55.34	60.71	61.04
Females,	57.49	43.92	44.66	39.29	38.96
<i>Woollen Goods.</i>	100.00	100.00	100.00	100.00	100.00
Males,	59.54	61.60	64.83	63.76	63.70
Females,	40.46	38.40	35.17	36.24	36.30
<i>Worsted Goods.</i>	100.00	100.00	100.00	100.00	100.00
Males,	38.69	42.13	52.10	53.51	52.18
Females,	61.31	57.87	47.90	46.49	47.82
<i>Nine Industries.</i>	100.00	100.00	100.00	100.00	100.00
Males,	63.58	65.42	65.88	64.30	65.15
Females,	36.42	34.58	34.12	35.70	34.85
<i>Other Industries.</i>	100.00	100.00	100.00	100.00	100.00
Males,	76.64	74.83	75.15	68.28	68.46
Females,	23.36	25.17	24.85	31.72	31.54
ALL INDUSTRIES.	100.00	100.00	100.00	100.00	100.00
Males,	69.36	69.55	69.87	65.69	66.30
Females,	30.64	30.45	30.13	34.31	33.70

* Includes the manufacture of Leather Goods, which in 1898 and 1899 is presented as a separate industry.

† Includes the manufacture of Paper Goods, which in 1898 and 1899 is presented as a separate industry.

Considering All Industries, it is seen that in 1875 out of every 100 persons employed 69 were males and 31 females; in 1885 and 1895 the same proportions with only a fractional change obtained. These proportions are based upon all the establishments reporting under a general Census, and the full number of persons employed in all manufacturing and mechanical industries. On the basis of these annual reports only a slight variation from these figures is shown, the number of males in every 100 being 66 and the number of females 34.

Looking now at the nine industries, we find that the proportion of females employed has increased in 1899 as compared with 1875 in Boots and Shoes and Metals and Metallic Goods only. In each of the other industries a decline is shown; that is to say, while an increase is shown numerically, the proportion of females in every 100 exhibits a decrease. Take Cotton Goods, for example; in 1899, there was an increase of 2,880 females in comparison with 1898, yet the proportion fell from 49 in every one hundred employed (49.22) to 48 in every one hundred (48.23), and comparing 1899 with 1875 we find that out of every 100 persons employed in the earlier year 59 were females while in 1899 they numbered only 48.

To indicate fully the conditions of employment in the industries represented, it is necessary that other elements be considered besides the average number of males and females employed. The following table, therefore, shows not only the percentages of increase in the average number of males and females but also of both sexes, the number employed at the periods of employment of the smallest and greatest number, and the range of employment and unemployment, which is based upon the increase or decrease between the smallest and greatest number of persons employed:

INDUSTRIES.	PERCENTAGES OF INCREASE (+) OR DECREASE (—) IN 1899 IN —						
	<i>Average Number of Persons Employed</i>			Smallest	Greatest	Range	
	Males	Females	Both Sexes				
Boots and shoes, . . .	+9.03	+6.88	+8.35	+6.58	+7.02	+7.90	
Carpetings, . . .	+7.90	+9.25	+8.57	+28.80	+0.47	—61.24	
Cotton goods, . . .	+11.57	+7.24	+9.44	+21.52	+5.58	—55.28	
Leather, . . .	+7.85	+64.00	+8.11	+14.29	+7.30	—5.52	
Machines and machinery, .	+24.30	+8.21	+24.05	+21.07	+28.67	+47.01	
Metals and metallic goods, .	+14.35	+5.89	+13.40	+17.12	+11.04	—1.40	
Paper, . . .	+2.93	+1.51	+2.37	+1.79	+5.42	+27.27	
Woollen goods, . . .	+0.40	+0.65	+0.49	+5.75	+3.00	—3.17	
Worsted goods, . . .	+10.75	+16.80	+13.56	+33.34	+10.88	—32.16	
Nine industries, . . .	+11.17	+7.12	+9.73	+16.12	+8.28	—12.24	
Other industries, . . .	+9.59	+8.69	+9.30	+10.80	+7.94	+2.28	
All industries, . . .	+10.60	+7.63	+9.58	+14.28	+8.15	—6.29	

From the final line in the above table, the following facts appear: In 1899, as compared with 1898, the average num-

ber of males increased 10.60 per cent, the average number of females increased 7.63 per cent, and the average number of persons of both sexes increased 9.58 per cent. There was an increase of 14.28 per cent in the aggregate of smallest number of persons employed at any one time, and an increase of 8.15 per cent in the aggregate of greatest number of persons employed at any one time, the "range" or excess of greatest over smallest number of persons employed being 6.29 per cent less in the latter year. It is therefore apparent that in the majority of the industries a larger number of persons was employed, and more continuously, in 1899 than in 1898. Referring to page 111, it is seen that the excess of greatest over smallest number was 113,926 in 1898 and 106,757 in 1899; that is to say, 7,169 more persons were employed in the latter than in the former year; the duration of this employment it is, of course, impossible to state.

For the purpose of indicating this range of employment and unemployment in a more graphic manner, the following table is presented:

COMPARATIVE YEARS.	Number of Estab- lishments Con- sidered	PERCENTAGES		
		Persons Employed at Periods of Employ- ment of Smallest Number of Persons Employed at Periods of Employment of Greatest Number	Range (Unemployed at some time During the Year)	Persons Em- ployed at Periods of Em- ployment of Greatest Number
1886,	1,027	77.33	22.67	100.00
1887,	1,027	78.57	21.43	100.00
1887,	1,140	73.72	21.28	100.00
1888,	1,140	77.18	22.82	100.00
1888,	1,364	76.64	23.36	100.00
1889,	1,364	79.52	20.48	100.00
1889,	3,041	76.67	23.33	100.00
1890,	3,041	78.05	21.95	100.00
1890,	3,745	77.91	22.09	100.00
1891,	3,745	73.50	21.50	100.00
1891,	4,473	77.52	22.48	100.00
1892,	4,473	76.90	23.10	100.00
1892,	4,397	77.66	22.34	100.00
1893,	4,397	64.38	35.62	100.00
1893,	4,093	65.17	34.83	100.00
1894,	4,093	66.55	33.45	100.00

COMPARATIVE YEARS.	Number of Establishments Considered	PERCENTAGES		
		Persons Employed at Periods of Employment of Smallest Number of Persons Employed at Periods of Employment of Greatest Number	Range (Unemployed at some time During the Year)	Persons Employed at Periods of Employment of Greatest Number
1894,	3,629	67.11	32.89	100.00
1895,	3,629	74.40	25.60	100.00
1895,	4,609	73.53	26.47	100.00
1896,	4,609	66.52	33.48	100.00
1896,	4,695	67.32	32.68	100.00
1897,	4,695	71.74	28.26	100.00
1897,	4,701	72.13	27.87	100.00
1898,	4,701	70.36	29.64	100.00
1898,	4,740	70.21	29.79	100.00
1899,	4,740	74.19	25.81	100.00

In this table there are 13 groups, each exhibiting a comparison between identical establishments making return for the years specified. It will be noted that the greatest number of persons employed has been considered as 100 per cent. If this greatest number was continuously employed, it is evident that no smaller percentage would appear. That is, there would be no distinction between "greatest" and "smallest"; but, as at the periods of employment of the smallest number fewer persons are employed, it necessarily follows that the difference between the number employed at the two periods is represented by a percentage which indicates the proportion of persons unemployed at some time during the year. Taking the last group in the table, the percentages show that in 1898, about 30 persons in every 100 (29.79 per cent) of the maximum number employed were out of work at some time during the year, the duration of the term of unemployment, of course, not being determined. In 1899, the corresponding percentage indicates that only about 26 persons in every 100 (25.81 per cent) of the maximum number employed were out of work. The range of unemployment, therefore, was greater in 1898 than 1899 or, in other words, the opportunities for employment were better in the latter year.

It should be borne in mind that the statistics concerning employment which have just been considered are based upon the returns made by each establishment. Upon pages 112 to 116, employment on the basis of industries is shown. This presentation exhibits the aggregate number of persons employed during each month for certain specified industries and for All Industries. In the following table, we reproduce percentages of employment and unemployment for All Industries :

MONTHS.	NUMBER OF PERSONS EMPLOYED		PERCENTAGES OF EMPLOYMENT		PERCENTAGES OF UNEMPLOYMENT	
	1898	1899	1898	1899	1898	1899
January,	327,161	343,586	97.04	92.37	2.96	7.63
February,	326,285	349,433	96.78	93.94	3.22	6.06
March,	332,732	357,336	98.69	96.07	1.31	3.93
April,	332,977	361,199	98.76	97.11	1.24	2.89
May,	325,379	361,669	96.51	97.23	3.49	2.77
June,	326,071	359,992	96.72	96.78	3.28	3.22
July,	321,846	356,977	95.46	95.97	4.54	4.03
August,	323,916	359,670	96.08	96.70	3.92	3.30
September,	326,456	366,766	96.83	98.60	3.17	1.40
October,	335,984	368,436	99.66	99.05	0.34	0.95
November,	335,584	371,953	99.54	100.00	0.46	-
December,	337,145	371,518	100.00	99.88	-	0.12

In the above table, 100 per cent is considered as representing the largest number of persons employed in any one month. In 1898, this percentage is found in December and in 1899, in November. That is to say, the largest number of persons employed, on the basis of industries, is found in these months, respectively. The month, therefore, which exhibits the largest percentage of unemployment would be that in which the smallest number of persons was employed. This is found in July in 1898, and in January in 1899; and it will be noted that during the latter half of 1899 the percentages of employment were more uniform than in the preceding six months. Dividing the number of persons employed month by month by the total number of establishments, 4,740, we obtain an average number of persons per establishment for the years 1898 and 1899. These are shown in the following table :

MONTHS.	AGGREGATE NUMBER OF PERSONS EMPLOYED IN EACH SPECIFIED MONTH		AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH ESTABLISHMENT IN EACH SPECIFIED MONTH	
	1898	1899	1898	1899
January,	327,161	343,586	69	72
February,	326,285	349,433	69	74
March,	332,732	357,336	70	75
April,	332,977	361,199	70	76
May,	325,379	361,669	69	76
June,	326,071	359,992	69	76
July,	321,846	356,977	68	75
August,	323,916	359,670	68	76
September,	326,456	366,766	69	77
October,	335,984	368,436	71	78
November,	335,584	371,958	71	78
December,	337,145	371,518	71	78

The averages in the above table show greater uniformity in 1899 than in 1898. Beginning with January, 1898, we find for this month that the number of persons employed in each of the 4,740 establishments, on an average, was 69; this average was the same in February rising to 70 in March and April, and falling to 69 in May and June and to 68 in July and August. Beginning with September, 1898, the average number per establishment began to increase and continued during the balance of the year 1898 and until the month of July, 1899, when it dropped from 76 to 75, rising again to 76 in the following month, and continuing to increase until October, when the average was 78, at which figure it remained for the balance of the year.

It has been customary in previous reports to present the number of persons employed month by month for each of the 88 industries. Considerations of space, however, have this year led to the curtailment of the presentation to the nine leading industries, but the figures in detail for 1898 and 1899 for any industry desired may be obtained upon application to this Department.

The presentation on pages 117 and 118 shows the aggregate amount of wages paid during each of the years 1898 and 1899. Considering the line for All Industries we find that in 1898 there was paid to the employes of the 4,740 establishments considered the sum of \$138,349,181 and in 1899,

\$154,415,381, an increase in 1899 as compared with 1898 of \$16,066,200, or 11.61 per cent. Of the industries in detail we find that, with 13 exceptions, each shows an increase in 1899 as compared with 1898; these exceptions with percentages of decrease are as follows:

INDUSTRIES.	Percent-ages	INDUSTRIES.	Percent-ages
Fine arts and taxidermy,	0.94	Liquors (bottled) and carbonated beverages,	4.06
Fertilizers,	0.99	Photographs and photographic materials,	5.05
Rubber and elastic goods,	1.08	Burial cases, caskets, coffins, etc.,	6.19
Liquors (malt),	1.35	Stone (quarried),	10.69
Stone (in the aggregate),	1.50	Hose: rubber, linen, etc.,	45.89
Bicycles, tricycles, etc.,	2.80		
Straw and palm leaf goods,	3.23		
Fireworks and matches,	3.69		

The following industries, 39 in number, exhibit an increase greater than that shown for All Industries:

INDUSTRIES.	Percent-ages	INDUSTRIES.	Percent-ages
Printing, publishing, and bookbinding,	12.01	Railroad construction and equipment,	19.29
Boxes, barrels, kegs, etc.,	12.16	Carpetings (textile),	19.90
Cotton goods (in the aggregate),	12.47	Woollen goods (shoddy, waste, etc.),	21.05
Cotton goods (woven),	12.80	Boots and shoes (findings),	21.10
Boxes (paper),	13.56	Ivory, bone, shell, and horn goods, etc.,	21.50
Worsted goods,	13.90	Hair work (animal and human),	22.59
Cement, kaolin, lime, and plaster,	13.96	Saddlery and harness,	22.95
Metals and metallic goods,	14.55	Sporting and athletic goods,	24.22
Cooking, lighting, and heating apparatus,	14.60	Boots and shoes (stitching, heeling, etc.),	24.55
Hosiery and knit goods,	14.67	Crayons, pencils, crucibles, etc.,	24.60
Cordage and twine,	14.89	Buttons and dress trimmings,	24.89
Boots and shoes (soles, heels, and cut stock),	15.54	Machines and machinery,	24.89
Silk and silk goods,	16.11	Chemical preparations (compounded),	25.08
Fancy articles, etc.,	17.09	Musical instruments and materials,	25.47
Emery and sand paper and cloth, etc.,	17.42	Lumber,	25.56
Artisans' tools,	17.45	Leather goods,	26.78
Brooms, brushes, and mops,	17.67	Jewelry,	27.23
Carpetings (in the aggregate),	18.88	Whips, lashes, and stocks,	28.37
		Electrical apparatus and appliances,	33.75
		Arms and ammunition,	34.96
		Shipbuilding,	49.16

The following 41 industries show a percentage of increase less than that shown for All Industries:

INDUSTRIES.	Percent-ages	INDUSTRIES.	Percent-ages
Wooden goods,	11.37	Carriages and wagons,	6.08
Boots and shoes (in the aggregate),	10.46	Paper goods,	5.99
Dyestuffs,	10.41	Electroplating,	5.77
Cotton goods (waste),	10.36	Ink, mucilage, and paste,	5.59
Models, lasts, and patterns,	10.20	Toys and games (children's),	5.51
Cotton yarn and thread,	10.15	Trunks and valises,	4.50
Print works, dye works, and bleach-		Clothing,	4.45
eries,	10.07	Glass,	4.41
Scientific instruments and appliances,	10.04	Paper,	4.33
Drugs and medicines,	10.02	Clocks and watches,	4.28
Boots and shoes (factory product),	9.96	Perfumes, toilet articles, etc.,	3.85
Furniture,	9.36	Liquors (distilled),	3.47
Tobacco, snuff, and cigars,	9.36	Building materials,	2.31
Leather,	9.32	Paints, colors, and crude chemicals,	2.03
Food preparations,	8.89	Woollen goods (in the aggregate),	1.63
Flax, hemp, and jute goods,	8.74	Carpetings (other than textile),	1.39
Tallow, candles, soap, and grease,	8.73	Earthen, plaster, and stone ware,	1.36
Polishes and dressing,	7.11	Glue, isinglass, and starch,	1.11
Oils and illuminating fluids,	6.78	Woollen goods (woven goods and	
Stone (cut and monumental),	6.46	yarn),	1.09
Agricultural implements,	6.35	Brick, tiles, and sewer pipe,	0.02
Awnings, sails, tents, etc.,	6.32		

On pages 119 and 120 is shown the average yearly earnings in each industry. These averages are obtained by dividing the total amount paid in wages by the figure representing the average number of persons employed, without regard to sex or age. On this basis we find that in the 4,740 establishments the average amount earned by each man, woman, and child in 1898, was \$419.91, and in 1899, \$427.71, an increase in the latter as compared with the former year of \$7.80, or 1.86 per cent. Reproducing the figures for the nine leading industries we secure the following table:

INDUSTRIES.	Number of Estab-lishments Con-sidered	AVERAGE YEARLY EARNINGS		INCREASE IN 1899	
		1898	1899	Amounts	Percent-ages
Boots and shoes,	688	\$460.10	\$469.04	\$8.94	1.94
Carpetings,	12	340.69	373.06	32.37	9.50
Cotton goods,	158	322.99	331.92	8.93	2.76
Leather,	96	465.22	470.42	5.20	1.11
Machines and machinery,	358	550.54	554.27	3.73	0.68
Metals and metallic goods,	393	505.75	510.89	5.14	1.02
Paper,	80	423.08	431.19	8.11	1.92

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE YEARLY EARNINGS		INCREASE IN 1899	
		1898	1899	Amounts	Percent- ages
Woollen goods,	133	\$370.73	\$374.92	\$4.19	1.13
Worsted goods,	34	361.69	362.75	1.06	0.29
Nine industries,	1,957	400.78	410.21	9.43	2.35
Other industries,	2,783	455.49	460.37	4.88	1.07
All industries,	4,740	419.91	427.71	7.80	1.86

Each of the nine leading industries shows an increase ranging from \$1.06 in Worsted Goods to \$32.37 in Carpetings. Referring to page 49 of the INDUSTRIAL CHRONOLOGY we find that there were the following reported instances of increase in the rate of wages paid in 1899 :

Boots and Shoes,	50
Carpetings,	1
Cotton Goods,	175
Machines and Machinery,	2
Metals and Metallic Goods,	10
Woollen Goods,	11
Worsted Goods,	4

Average yearly earnings should not be considered as indicative of the *rate* of wages. The apparent increase or decrease in average yearly earnings while to a certain extent indicative of the fluctuations in employment, has but limited significance when considered alone, as many conditions affect the averages. The fact that the average number of persons employed is used as the divisor and the total amount paid in wages as the dividend in obtaining the average yearly earnings, implies that an uncertain figure, having no real statistical importance when considered apart from other elements, will be the result of this division, for males and females, young persons and adults, day hands and piece hands, are indiscriminately included in the average number of persons employed. To illustrate our meaning, we show in the following table the percentages of increase or decrease in the average number of males and females employed, in the amount of wages paid, and the average yearly earnings :

INDUSTRIES.	PERCENTAGES OF INCREASE IN —				
	<i>Persons Employed</i>			Total Wages Paid	Average Yearly Earnings
	Both Sexes	Males	Females		
Boots and shoes,	8.35	9.03	6.88	10.46	1.94
Carpetings,	8.57	7.90	9.25	18.88	9.50
Cotton goods,	9.44	11.57	7.24	12.47	2.76
Leather,	8.11	7.85	64.00	9.32	1.11
Machines and machinery,	24.05	24.30	8.21	24.89	0.68
Metals and metallic goods,	13.40	14.35	5.89	14.55	1.02
Paper,	2.37	2.93	1.51	4.33	1.92
Woollen goods,	0.49	0.40	0.65	1.63	1.13
Worsted goods,	13.56	10.75	16.80	13.90	0.29

As has been previously stated, the average amount earned by an employé is but one factor among the many connected with the question of wages. The duration of employment, the method of payment (whether on the day or piece basis), the employment of a larger number of females and young persons in one year as compared with another, each has some effect on the average yearly earnings. Besides these elements, the question of skill forms an important part, and to it is undoubtedly due some of the fluctuations which may be observed in the different industries.

The highest average yearly earnings in 1899 are found in Liquors (Malt), the amount earned by each employé, on an average, being \$795.87. The lowest average yearly earnings are found in Flax, Hemp, and Jute Goods, the average amount earned per employé being \$314. In Liquors (Malt) all the employés are males, and according to the Census of 1895, 99.45 per cent were day hands, 0.43 per cent hour hands, and 0.12 per cent piece hands. So far as the industry in which the lowest average annual earnings are found, nearly 55 (54.66) out of every 100 persons employed were piece hands.

Actual wage conditions may, in the absence of individual returns be quite accurately ascertained by a comparison of the fluctuation in amounts paid weekly to male and female employés. Of course the question of age affects these returns, and to obviate this element as much as possible the separation of minors and adults was requested in 1899. On pages 121 to 125 are presented, for the nine leading industries and for All Industries, the number of males and females, without

regard to age, receiving certain specified amounts weekly for the year 1898, and for 1899 the number of adult males and females and minor persons receiving the same wages. From considerations of space we have confined the presentation to certain specified industries, but the figures in detail for any industry desired will be supplied upon application to this Department.

The following table reproduces the figures for 1899 and also shows the percentages of adult males and females and of young persons in each class :

CLASSIFICATION OF WEEKLY EARNINGS.	ADULTS (21 Years of Age and over)		Young Persons (under 21 years of age)	Totals	PERCENTAGES		
	Males	Females			Males	Females	Young Persons
Under \$5,	9,608	18,722	31,181	59,511	16.14	31.46	52.40
\$5 but under \$6,	9,438	17,490	13,633	40,561	23.27	43.12	33.61
\$6 but under \$7,	18,038	21,038	8,954	48,030	37.56	43.80	18.64
\$7 but under \$8,	23,409	16,479	4,092	43,980	53.23	37.47	9.30
\$8 but under \$9,	24,009	12,335	1,390	37,734	63.63	32.69	3.68
\$9 but under \$10,	34,349	8,342	864	43,555	78.86	19.15	1.99
\$10 but under \$12,	38,624	6,196	472	45,292	85.28	13.68	1.04
\$12 but under \$15,	43,690	3,212	133	47,035	92.89	6.83	0.28
\$15 but under \$20,	33,580	969	22	34,571	97.13	2.80	0.07
\$20 and over,	10,620	127	1	10,748	98.81	1.18	0.01
TOTALS,	245,365	104,910	60,742	411,017	59.70	25.52	14.78

In each class the percentages add across to 100. In the class including those paid under \$5 per week, over one-half (52.40 per cent) are persons under 21 years of age, about one-third (31.46 per cent) are adult females, and about one-sixth (16.14 per cent) are adult males. In the second class, slightly over one-third are young persons, and in the third class, a little less than one-fifth are young persons. The total number of young persons in these three classes aggregate 53,768, or 13.08 per cent of the total number of persons employed during the week considered. The total number of young persons in all the classes represent 14.78 per cent of the aggregate number of persons employed and together with the adult females affect in a considerable degree the average yearly earnings of all persons employed. This is, perhaps, more clearly shown in the following table :

CLASSIFICATION OF WEEKLY EARNINGS.	PERCENTAGES						
	1898			1899			
	Males	Females	Totals	Males	Females	Young Persons	Totals
Under \$5,	9.34	29.07	16.05	3.92	17.85	51.33	14.48
\$5 but under \$6,	6.25	18.85	10.54	3.84	16.67	22.44	9.87
\$6 but under \$7,	8.67	18.07	11.87	7.36	20.05	14.74	11.69
\$7 but under \$8,	9.61	13.18	10.81	9.54	15.71	6.74	10.70
\$8 but under \$9,	9.01	8.60	8.87	9.78	11.76	2.29	9.18
\$9 but under \$10,	12.05	5.10	9.69	14.00	7.95	1.42	10.60
\$10 but under \$12,	13.87	4.27	10.61	15.74	5.91	0.78	11.02
\$12 but under \$15,	15.72	2.21	11.13	17.81	3.06	0.22	11.44
\$15 but under \$20,	11.77	0.58	7.96	13.68	0.92	0.03	8.41
\$20 and over,	3.71	0.09	2.47	4.33	0.12	0.01	2.61
TOTALS,	100.00	100.00	100.00	100.00	100.00	100.00	100.00

In this table, the percentages in each column add to 100, and it is seen that over one-half of the young persons employed in 1899 were paid under \$5 a week and nearly nine-tenths of all the young persons are in the first three classes. Under the system of classification shown for 1898, the proportion of the sexes is approximated the same in the wage class \$8 but under \$9; but in 1899, owing to the presentation of young persons, no such approximation appears and in no wage class do the adult males or females approach one another so closely, showing clearly that the inclusion of young persons in the divisor which is used in obtaining the average yearly earnings reduces that amount to a considerable extent. For the purpose of analysis we have, in the following table, distributed the average number of persons employed (361,031) in 1899 into the several wage classes, based upon the percentages shown in the preceding table, and show the amount paid to adult males, adult females, and to young persons for one week of the year 1899:

CLASSIFICATION OF WEEKLY EARNINGS.	NUMBER OF—			ESTIMATED WEEKLY EARNINGS OF—		
	Males	Females	Young Persons	Males	Females	Young Persons
Under \$5,	8,438	16,446	27,393	\$25,314	\$49,338	\$82,179
\$5 but under \$6,	8,292	15,365	11,977	45,606	84,508	65,874
\$6 but under \$7,	15,852	18,485	7,867	103,038	120,153	51,136
\$7 but under \$8,	20,563	14,475	3,592	154,223	108,563	26,940
\$8 but under \$9,	21,089	10,834	1,220	179,257	92,089	10,370
\$9 but under \$10,	30,179	7,328	762	286,701	69,616	7,239

CLASSIFICATION OF WEEKLY EARNINGS.	NUMBER OF —			ESTIMATED WEEKLY EARNINGS OF —		
	Males	Females	Young Persons	Males	Females	Young Persons
\$10 but under \$12, . . .	33,929	5,443	414	\$373,219	\$59,873	\$4,554
\$12 but under \$15, . . .	38,365	2,821	116	517,928	38,084	1,566
\$15 but under \$20, . . .	29,492	850	21	516,110	14,875	368
\$20 and over,	9,311	111	1	209,498	2,498	23
TOTALS,	215,510	92,158	53,363	\$2,410,894	\$639,597	\$250,249

Bearing in mind that the above figures are only estimates based upon the actual percentages shown in the table on page 138, we see that out of a total of \$3,300,740 paid out during the week considered, \$2,410,894, or 73.04 per cent, was earned by the adult males; \$639,597, or 19.38 per cent, by the adult females; and \$250,249, or 7.58 per cent, by the minor persons of both sexes. If we take the total amount paid out in wages during 1899 (\$154,415,381) as shown on page 118 for All Industries, and distribute it in the same proportion among the males, females, and young persons we secure the following estimated amounts paid to each class:

Males,	\$112,784,994
Females,	29,925,701
Young persons,	11,704,686
Total,	\$154,415,381

Dividing these amounts by the estimated average number of adult males, adult females, and minor persons, we secure as an average amount earned yearly as follows:

Males,	\$523.34
Females,	324.72
Young persons,	219.34

It will be remembered that the average yearly earnings for all persons without regard to age or sex was \$427.71. Distributing the persons employed on this same basis for individual industries would show somewhat different results from those given in the presentation on pages 119 and 120, and this can be done in 1900 when comparative statements will be shown, prepared from the figures returned on the same basis of sex and age classification as is shown in this report for the year 1899.

Working Time and Proportion of Business Done.

On the following pages we show the average number of days in operation and the average proportion of business done for the 4,740 establishments making return in each of the years 1898 and 1899.

The average number of days in operation is based upon the average number of persons employed, the number of days reported by each establishment being multiplied by the figures representing the average number of persons employed therein, and the sum of these multiplications for all the establishments divided by the aggregate average number of persons, an average for each industry and for All Industries being thus obtained. The actual number of working days exclusive of Sundays and holidays was 306 in 1898 and 305 in 1899.

The proportion of business done is based upon the greatest amount of goods which can be turned out in an establishment, presupposing a sufficient demand for goods, without increasing its present facilities. This greatest amount is considered as 100 per cent. If an establishment produced goods equivalent to three-quarters of its greatest capacity, the proportion of business done would be 75 per cent, while if only one-half of a possible output was reached it would be considered as 50 per cent. For example, in All Industries the average proportion of business done for the year 1899 is represented by 66.21 per cent; that is to say, it amounted to two-thirds of what could have been done, had business conditions warranted, without enlarging the capacity of the manufacturing plants. The several proportions returned by the establishments in each industry have been aggregated and the sum divided by the full number of establishments to obtain the average for each industry and for All Industries.

DAYS IN OPERATION: BY INDUSTRIES.

1898, 1899.

[The figures given in this presentation represent the average number of days each person was employed in the industries considered during the years 1898 and 1899. The average number of days in operation is based upon the average number of persons employed, the number of days per establishment being multiplied by the figures representing the average number of persons, and the sum divided by the aggregate average number of persons, an average for each industry and for All Industries being thus obtained. Comparison is made between 1898 and 1899, and the relative increase or decrease in 1899 as compared with 1898 is given with its equivalent percentage.]

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE NUMBER OF DAYS IN OPERATION		INCREASE (+) OR DECREASE (-) IN 1899	
		1898	1899	Days	Percent- ages
Agricultural implements,	9	277.41	289.21	+11.80	+4.25
Arms and ammunition,	13	290.92	295.11	+4.19	+1.44
Artisans' tools,	75	287.77	295.91	+8.14	+2.83
Awnings, sails, tents, etc.,	44	289.87	291.13	+1.31	+0.45
Bicycles, tricycles, etc.,	21	295.92	295.06	-0.86	-0.29
Boots and shoes,	688	287.39	290.69	+3.30	+1.15
Boots and shoes (factory product),	450	287.28	290.36	+3.08	+1.07
Soles, heels, and cut stock,	200	287.49	293.58	+6.09	+2.12
Boot and shoe findings,	23	295.70	295.14	-0.56	-0.19
Stitching, heelings, etc.,	15	290.42	292.55	+2.13	+0.73
Boxes, barrels, kegs, etc.,	119	282.99	287.90	+4.91	+1.74
Boxes (paper),	63	285.61	287.63	+2.02	+0.71
Brick, tiles, and sewer pipe,	67	206.71	213.94	+7.23	+3.50
Brooms, brushes, and mops,	22	292.74	295.51	+2.77	+0.95
Building materials,	50	289.39	295.33	+5.94	+2.05
Burial cases, caskets, coffins, etc.,	6	302.32	294.01	-8.31	-2.75
Buttons and dress trimmings,	15	279.53	298.17	+18.64	+6.67
Carpetings,	12	223.08	274.67	+51.59	+23.13
Textile,	8	219.81	273.78	+53.97	+24.55
Other,	4	296.21	293.44	-2.77	-0.94
Carriages and wagons,	128	286.29	291.68	+5.39	+1.88
Cement, kaolin, lime, and plaster,	9	288.21	263.21	+5.00	+1.94
Chemical preparations (compounded),	12	296.74	292.06	-4.68	-1.58
Clocks and watches,	11	282.62	285.42	+2.80	+0.99
Clothing,	146	289.65	290.25	+0.60	+0.21
Cooking, lighting, and heating apparatus,	42	260.14	274.67	+14.53	+5.59
Cordage and twine,	21	290.44	293.51	+3.07	+1.06
Cotton goods,	153	293.01	302.06	+9.05	+3.09
Cotton goods (woven),	115	291.80	302.04	+10.24	+3.51
Cotton yarn and thread,	35	301.34	302.14	+0.80	+0.27
Cotton waste,	8	303.75	302.48	-1.27	-0.42
Crayons, pencils, crucibles, etc.,	3	292.63	287.73	-4.90	-1.67
Drugs and medicines,	24	296.06	297.73	+1.67	+0.56
Dyestuffs,	6	270.25	277.71	+7.46	+2.76
Earthen, plaster, and stone ware,	10	282.41	283.00	+0.59	+0.21
Electrical apparatus and appliances,	20	298.94	299.43	+0.49	+0.16
Electroplating,	12	276.39	272.53	-3.86	-1.40
Emery and sand paper and cloth, etc.,	9	294.31	297.67	+3.36	+1.14
Fancy articles, etc.,	16	295.79	295.54	-0.25	-0.08
Fertilizers,	6	300.55	299.78	-0.77	-0.26
Fine arts and taxidermy,	3	303.71	304.42	+0.71	+0.23
Fireworks and matches,	4	274.64	268.80	-5.84	-2.13
Flax, hemp, and jute goods,	8	286.48	296.12	+9.64	+3.36

DAYS IN OPERATION: BY INDUSTRIES—1898, 1899
—Concluded.

INDUSTRIES.	Number of Establishments Considered	AVERAGE NUMBER OF DAYS IN OPERATION		INCREASE (+) OR DECREASE (—) IN 1899	
		1898	1899	Days	Percentages
Food preparations,	356	296.91	297.93	+1.02	+0.34
Furniture,	131	293.52	296.21	+2.69	+0.92
Glass,	14	265.76	273.74	+7.98	+3.00
Glue, isinglass, and starch,	19	244.17	255.07	+10.90	+4.46
Hair work (animal and human),	4	267.46	273.11	+5.65	+2.11
Hose: rubber, linen, etc.,	6	299.91	293.96	—5.95	—1.98
Hosiery and knit goods,	83	297.57	299.71	+2.14	+0.72
Ink, mucilage, and paste,	7	300.85	303.61	+2.76	+0.92
Ivory, bone, shell, and horn goods, etc.,	21	294.40	292.13	—2.27	—0.77
Jewelry,	90	282.65	293.53	+10.88	+3.85
Leather,	96	290.30	297.37	+7.07	+2.44
Leather goods,	26	301.37	300.46	—0.91	—0.30
Liquors (bottled) and carbonated beverages,	33	303.18	300.54	—2.64	—0.87
Liquors (malt),	34	304.22	304.46	+0.24	+0.08
Liquors (distilled),	5	254.57	273.52	+18.95	+7.44
Lumber,	25	243.45	276.33	+32.88	+13.51
Machines and machinery,	358	287.84	299.12	+11.28	+3.92
Metals and metallic goods,	393	282.17	292.78	+10.61	+3.76
Models, lasts, and patterns,	47	290.44	295.01	+4.57	+1.57
Musical instruments and materials,	55	281.55	294.88	+13.33	+4.73
Oils and illuminating fluids,	10	302.45	301.55	—0.90	—0.30
Paints, colors, and crude chemicals,	28	287.91	292.20	+4.29	+1.49
Paper,	80	281.48	288.45	+6.97	+2.48
Paper goods,	41	300.26	298.77	—1.49	—0.50
Perfumes, toilet articles, etc.,	6	280.00	295.89	+15.89	+5.63
Photographs and photographic materials,	21	304.18	301.14	—3.04	—1.00
Polishes and dressing,	31	301.71	298.39	—3.32	—1.10
Printing, publishing, and bookbinding,	62	298.76	302.95	+4.19	+1.40
Print works, dye works, and bleacheries,	49	291.96	299.22	+7.26	+2.49
Railroad construction and equipment,	16	290.05	302.36	+12.31	+4.24
Rubber and elastic goods,	46	269.28	270.19	+0.91	+0.34
Saddlery and harness,	32	299.20	300.96	+1.76	+0.59
Scientific instruments and appliances,	22	300.72	297.87	—2.85	—0.95
Shipbuilding,	49	295.21	292.32	—2.89	—0.98
Silk and silk goods,	11	282.29	292.39	+10.10	+3.58
Sporting and athletic goods,	7	278.86	291.65	+12.79	+4.59
Stone,	196	275.95	268.24	—7.71	—2.79
Quarried,	45	268.10	251.14	—16.96	—6.33
Cut and monumental,	151	285.08	284.55	—0.53	—0.19
Straw and palm leaf goods,	17	280.44	277.08	—3.36	—1.20
Tallow, candles, soap, and grease,	61	295.53	297.14	+1.61	+0.54
Tobacco, snuff, and cigars,	73	290.05	295.35	+5.30	+1.83
Toys and games (children's),	12	294.78	293.34	—1.44	—0.49
Trunks and valises,	7	256.63	262.80	+6.17	+2.40
Whips, lashes, and stocks,	11	298.67	298.89	+0.22	+0.07
Wooden goods,	70	292.74	295.92	+3.18	+1.09
Woollen goods,	138	282.33	286.31	+3.98	+1.41
Woven goods and yarn,	119	282.73	286.76	+4.03	+1.43
Shoddy, waste, etc.,	19	260.02	269.83	+9.81	+3.76
Worsted goods,	34	261.96	298.62	+36.66	+13.99
ALL INDUSTRIES,	4,740	286.27	294.14	+7.87	+2.75

PROPORTION OF BUSINESS DONE: BY INDUSTRIES.

1898, 1899.

[The figures given in this presentation represent the average proportion of business done by each establishment in the industries considered. Greatest capacity, or maximum production, has been considered as 100 per cent, and the percentages given indicate the average proportion of business done by each establishment during each year on the basis stated. Comparison is made between 1898 and 1899, and the relative increase or decrease in 1899 as compared with 1898 is given with its equivalent percentage.]

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE PROPOR- TION OF BUSINESS DONE		INCREASE (+) OR DECREASE (—) IN 1899	
		1898	1899	Proportion	Percent- ages
Agricultural implements,	9	57.00	60.33	+3.33	+5.84
Arms and ammunition,	13	64.31	67.69	+3.38	+5.26
Artisans' tools,	75	55.59	61.32	+5.73	+10.31
Awings, sails, tents, etc.,	44	48.91	53.02	+4.11	+8.40
Bicycles, tricycles, etc.,	21	49.24	56.00	+6.76	+13.73
Boots and shoes,	683	61.22	66.16	+4.94	+8.07
Boots and shoes (factory product),	450	61.85	66.13	+4.28	+6.92
Soles, heels, and cut stock,	200	58.92	65.34	+6.42	+10.90
Boot and shoe findings,	23	70.22	74.78	+4.56	+6.49
Stitching, heeling, etc.,	15	59.13	65.00	+5.87	+9.93
Boxes, barrels, kegs, etc.,	119	60.97	67.55	+6.58	+10.79
Boxes (paper),	63	64.21	70.56	+6.35	+9.89
Brick, tiles, and sewer pipe,	67	60.77	62.80	+2.03	+3.34
Brooms, brushes, and mops,	22	64.05	69.41	+5.36	+8.37
Building materials,	50	59.24	61.50	+2.26	+3.81
Burial cases, caskets, coffins, etc.,	6	77.00	72.83	-4.17	-5.42
Buttons and dress trimmings,	15	47.20	62.00	+14.80	+31.36
Carpetings,	12	66.83	77.00	+10.17	+15.22
Textile,	8	70.75	77.25	+6.50	+9.19
Other,	4	59.00	76.50	+17.50	+29.66
Carriages and wagons,	128	56.59	60.11	+3.52	+6.22
Cement, kaolin, lime, and plaster,	9	69.22	67.11	-2.11	-3.05
Chemical preparations (compounded),	12	53.42	52.50	-0.92	-1.72
Clocks and watches,	11	54.36	66.82	+12.46	+22.92
Clothing,	146	66.34	69.73	+3.39	+5.11
Cooking, lighting, and heating apparatus,	42	60.71	67.69	+6.98	+11.50
Cordage and twine,	21	64.05	71.38	+7.33	+11.44
Cotton goods,	158	87.09	90.89	+3.80	+4.36
Cotton goods (woven),	115	88.23	92.67	+4.44	+4.92
Cotton yarn and thread,	35	83.43	84.96	+1.53	+1.83
Cotton waste,	8	86.88	87.50	+0.62	+0.71
Crayons, pencils, crucibles, etc.,	3	83.33	83.33	*=	*=
Drugs and medicines,	24	56.58	60.88	+4.30	+7.60
Dyestuffs,	6	61.00	58.67	-2.33	-3.82
Earthen, plaster, and stone ware,	10	66.50	65.30	-1.20	-1.80
Electrical apparatus and appliances,	20	62.15	66.85	+4.70	+7.56
Electroplating,	12	60.58	64.00	+3.42	+5.65
Emery and sand paper and cloth, etc.,	9	64.78	73.44	+8.66	+13.37
Fancy articles, etc.,	16	60.81	60.38	-0.43	-0.71
Fertilizers,	6	62.50	65.83	+3.33	+5.33
Fine arts and taxidermy,	3	70.00	75.00	+5.00	+7.14
Fireworks and matches,	4	54.50	53.75	-0.75	-1.38
Flax, hemp, and jute goods,	8	72.88	82.63	+9.75	+13.38

* No change.

PROPORTION OF BUSINESS DONE: BY INDUSTRIES—1898,
1899—Concluded.

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE PROPOR- TION OF BUSINESS DONE		INCREASE (+) OR DECREASE (—) IN 1899	
		1898	1899	Proportion	Percent- ages
Food preparations,	356	59.69	60.67	+0.98	+1.64
Furniture,	131	59.76	65.08	+5.32	+8.90
Glass,	14	54.64	61.21	+6.57	+12.02
Glue, isinglass, and starch,	19	68.11	67.84	—0.27	—0.40
Hair work (animal and human),	4	53.00	67.50	+14.50	+27.36
Hose: rubber, linen, etc.,	6	63.33	61.50	—1.83	—2.89
Hosiery and knit goods,	38	58.89	66.18	+7.29	+12.38
Ink, mncilage, and paste,	7	51.14	57.57	+6.43	+12.57
Ivory, bone, shell, and horn goods, etc.,	21	67.14	71.76	+4.62	+6.88
Jewelry,	90	65.43	73.46	+8.03	+12.27
Leather,	96	62.28	70.29	+8.01	+12.86
Leather goods,	26	58.77	63.23	+4.46	+7.59
Liquors (bottled) and carbonated beverages,	33	54.15	53.45	—0.70	—1.29
Liquors (malt),	34	57.87	55.93	—1.94	—3.35
Liquors (distilled),	5	24.60	46.80	+22.20	+90.24
Lumber,	25	55.96	66.12	+10.16	+18.16
Machines and machinery,	358	57.51	64.98	+7.47	+12.99
Metals and metallic goods,	393	60.40	68.41	+8.01	+13.26
Models, lasts, and patterns,	47	55.49	57.74	+2.34	+4.22
Musical instruments and materials,	55	61.96	65.24	+3.28	+5.29
Oils and illuminating fluids,	10	61.00	62.70	+1.70	+2.79
Paints, colors, and crude chemicals,	28	58.00	62.21	+4.21	+7.26
Paper,	80	80.71	83.94	+3.23	+4.00
Paper goods,	41	66.51	74.85	+8.34	+12.54
Perfumes, toilet articles, etc.,	6	40.00	32.83	—7.17	—17.93
Photographs and photographic materials,	21	59.52	62.29	+2.77	+4.65
Polishes and dressing,	31	54.61	51.68	—2.93	—5.37
Printing, publishing, and bookbinding,	62	70.21	73.35	+3.14	+4.47
Print works, dye works, and bleacheries,	49	63.92	69.43	+5.51	+8.62
Railroad construction and equipment,	16	58.50	59.50	+1.00	+1.71
Rubber and elastic goods,	46	71.52	71.78	+0.26	+0.36
Saddlery and harness,	32	56.06	61.09	+5.03	+8.97
Scientific instruments and appliances,	22	57.95	60.59	+2.64	+4.56
Shipbuilding,	49	46.14	53.73	+7.59	+16.45
Silk and silk goods,	11	78.09	86.09	+8.00	+10.24
Sporting and athletic goods,	7	46.86	54.29	+7.43	+15.86
Stone,	196	51.90	55.32	+3.42	+6.59
Quarried,	45	49.33	53.53	+4.20	+8.51
Cut and monumental,	151	52.66	55.85	+3.19	+6.06
Straw and palm leaf goods,	17	71.53	67.88	—3.65	—5.10
Tallow, candles, soap, and grease,	61	60.08	62.49	+2.41	+4.01
Tobacco, snuff, and cigars,	73	54.60	58.47	+3.87	+7.09
Toys and games (children's),	12	63.50	58.50	—5.00	—7.87
Trunks and valises,	7	47.86	59.29	+11.43	+23.88
Whips, lashes, and stocks,	11	77.27	86.36	+9.09	+11.76
Wooden goods,	70	57.86	61.76	+3.90	+6.74
Woollen goods,	138	77.02	76.85	—0.17	—0.22
Woven goods and yarn,	119	80.34	78.40	—1.94	—2.41
Shoddy, waste, etc.,	19	56.26	67.11	+10.85	+19.29
Worsted goods,	34	75.03	79.88	+4.85	+6.46
ALL INDUSTRIES,	4,740	61.67	66.21	+4.54	+7.36

Analysis.

The average number of days in operation in All Industries in 1898 was 286.27 and in 1899, 294.14, an increase of 7.87 days, or 2.75 per cent. In the following industries an increase *greater* than that shown for All Industries appears :

INDUSTRIES.	Days	INDUSTRIES.	Days
Glass,	7.98	Sporting and athletic goods, . .	12.79
Artisans' tools,	8.14	Musical instruments and materials, .	13.33
Cotton goods (aggregate), . . .	9.05	Cooking, lighting, and heating apparatus,	14.53
Flax, hemp, and jute goods, . .	9.64	Perfumes, toilet articles, etc., . .	15.89
Silk and silk goods,	10.10	Buttons and dress trimmings, . .	18.64
Cotton goods (woven),	10.24	Liquors (distilled),	18.95
Metals and metallic goods, . .	10.61	Lumber,	32.88
Jewelry,	10.88	Worsted goods,	36.66
Glue, isinglass, and starch, . .	10.90	Carpetings (aggregate),	51.59
Machines and machinery, . . .	11.28	Carpetings (textile),	53.97
Agricultural implements, . . .	11.80		
Railroad construction and equipment,	12.31		

As previously stated, the actual number of working days in 1899 was 305 ; allowing five days for ordinary shutdowns for repairs, vacations, etc., the running time for the year would be 300 days. The following industries exceeded 300 days for 1899 :

INDUSTRIES.	Days	INDUSTRIES.	Days
Leather,	300.46	Cotton goods (yarn and thread), . .	302.14
Liquors (bottled) and carbonated beverages,	300.54	Railroad construction and equipment,	302.36
Saddlery and harness,	300.96	Cotton goods (waste),	302.48
Photographs and photographic materials,	301.14	Printing, publishing, and bookbinding,	302.95
Oils and illuminating fluids, . .	301.55	Ink, mucilage, and paste,	303.61
Cotton goods (woven),	302.04	Fine arts and taxidermy,	304.42
Cotton goods (aggregate), . . .	302.06	Liquors (malt),	304.46

Decreases in running time in 1899 as compared with 1898 were very slight, in only three instances amounting to one week or over, the industries being Burial Cases, Caskets, Coffins, etc., and Stone (quarried) and in the aggregate.

The average number of days in operation for the nine leading industries is brought forward in the following table :

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE NUMBER OF DAYS IN OPERATION		INCREASE IN 1899	
		1898	1899	Days	Percent- ages
Boots and shoes,	688	287.39	290.69	3.30	1.15
Carpetings,	12	223.08	274.67	51.59	23.13
Cotton goods,	158	293.01	302.06	9.05	3.09
Leather,	96	290.30	297.37	7.07	2.44
Machines and machinery,	358	287.84	299.12	11.28	3.92
Metals and metallic goods,	393	282.17	292.78	10.61	3.76
Paper,	80	281.48	283.45	6.97	2.48
Woollen goods,	138	282.33	286.31	3.98	1.41
Worsted goods,	34	261.96	298.62	36.66	13.99
Nine industries,	1,957	285.76	295.79	10.03	3.51
Other industries,	2,783	287.22	291.07	3.85	1.34
All industries,	4,740	286.27	294.14	7.87	2.75

All of the leading industries show increase in average number of days in operation, the highest number (51.59) being found in Carpetings and the lowest (3.30) in Boots and Shoes.

The establishments in the nine industries in the aggregate worked 10 more days on an average in 1899 than in 1898, and the establishments in other industries about four more days.

The average proportion of business done in 1898 was, for All Industries, 61.67 per cent and in 1899, 66.21 per cent, an increase in the latter year of 7.36 per cent. No single industry in 1899 shows production carried to full capacity, or 100 per cent; the nearest approach to it is found in Cotton Goods (Woven) the average proportion of business done being 92.57. One industry, namely, Crayons, Pencils, Crucibles, etc., exhibits no change in average proportion of business done, it being the same in both years. In 1899 proportion did not reach 50 per cent in two industries, namely, Liquors (Distilled) and Perfumes, Toilet Articles, etc.

Production equalled, on an average, three-quarters or more of the greatest capacity in

Carpetings (aggregate).

Carpetings (Textile).

Carpetings (Other).

Cotton Goods (aggregate).

Cotton Goods (Woven).

Cotton Yarn and Thread.

Cotton Waste.

Crayons, Pencils, Crucibles, etc.

Fine Arts and Taxidermy.

Flax, Hemp, and Jute Goods.

Paper.

Silk and Silk Goods.

Whips, Lashes, and Stocks.

Woollen Goods (aggregate).

Woollen Goods (Woven Goods and Yarn).

Worsted Goods.

The following table reproduces the average proportion of business done for the nine leading industries :

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE PROPOR- TION OF BUSINESS DONE		INCREASE (+) OR DECREASE (-) IN 1899	
		1898	1899	Proportion	Percent- ages
Boots and shoes,	688	61.22	66.16	+4.94	+8.07
Carpetings,	12	66.83	77.00	+10.17	+15.22
Cotton goods,	158	87.09	90.89	+3.80	+4.36
Leather,	96	62.28	70.29	+8.01	+12.86
Machines and machinery,	358	57.51	64.98	+7.47	+12.99
Metals and metallic goods,	393	60.40	68.41	+8.01	+13.26
Paper,	80	80.71	83.94	+3.23	+4.00
Woollen goods,	138	77.02	76.85	-0.17	-0.22
Worsted goods,	34	75.03	79.88	+4.85	+6.46
Nine industries,	1,957	64.70	70.30	+5.60	+8.66
Other industries,	2,783	59.54	63.33	+3.79	+6.37
All industries,	4,740	61.67	66.21	+4.54	+7.36

Of these leading industries, Cotton Goods is the only one which in 1899 approached full capacity, the average proportion of business done being over 90 per cent. Paper follows, the average proportion being 83.94, and is in turn followed by Worsted Goods, in which the average is 79.88. The lowest proportion of business done is found in Machines and Machinery, the percentage being 64.98, and but one industry, Wool- len Goods, shows a less proportion in 1899 than in 1898. In no case does production fall below six-tenths of the possible output in so far as relates to the nine leading industries.

General Summary of Industrial Conditions.

In the following table we reproduce the leading facts relative to All Industries, drawn from the several presentations shown on the preceding pages :

CLASSIFICATION.	1898	1899	INCREASE (+) OR DECREASE (—) IN 1899	
			Amounts	Percent- ages
Number of establishments considered,	4,740	4,740	-	-
Number of private firms,*	3,510	3,445	-65	-1.85
Number of corporations,*	1,155	1,157	+2	+0.17
Number of industrial combinations,*	14	23	+9	+64.29
Number of partners,	5,514	5,352	-162	-2.94
Males,	5,248	5,084	-164	-3.13
Females,	157	154	-3	-1.91
Special and estates,	109	114	+5	+4.59
Number of stockholders,	46,352	43,810	-2,533	-5.46
Males,	25,689	24,270	-1,410	-5.49
Females,	15,173	14,334	-839	-5.53
Banks, trustees, etc.,	5,490	5,206	-284	-5.17
Average partners to a private firm,	1.57	1.55	-	-
Average stockholders to a corporation,	40.13	37.87	-	-
Amount of capital invested,	\$408,317,396	\$443,908,875	+\$35,591,479	+8.72
Value of stock used,	\$357,760,887	\$418,030,367	+\$61,169,480	+17.10
Value of goods made and work done,	\$632,742,529	\$731,415,842	+\$98,673,313	+15.59
Persons employed :				
Average number,	329,474	361,031	+31,557	+9.58
Males,	216,430	239,366	+22,936	+10.60
Females,	113,044	121,665	+8,621	+7.63
Smallest number,	268,453	306,800	+38,347	+14.28
Greatest number,	382,379	413,557	+31,178	+8.15
Excess of greatest over smallest,	113,926	106,757	-7,169	-6.29
Total amount paid in wages,	\$138,349,181	\$154,415,381	+\$16,066,200	+11.61
Average yearly earnings,	\$419.91	\$427.71	+\$7.80	+1.86
Average proportion of business done,	61.67	66.21	+4.54	+7.36
Average number of days in operation,	286.27	294.14	+7.87	+2.75

* See head-notes to tables on pages 78, 79, 82, and 83.

It should be borne in mind that these returns were made for the years 1898 and 1899 by identical establishments, and it is therefore possible to make direct comparisons accurately reflecting the condition of the specified industries and of All Industries in the aggregate. From the above table, it will be seen that the value of goods made and work done shows an

increase of 15.59 per cent in 1899 as against the previous year. This percentage, based upon the returns of 4,740 representative establishments, is undoubtedly applicable to the State as a whole. In the following table, we show for the nine leading industries and for All Industries the value of product for the Census years 1885 and 1895 and the estimated product for 1898 and 1899 :

INDUSTRIES.	VALUE OF GOODS MADE AND WORK DONE			
	Census Years		1898	1899
	1885	1895		
ALL INDUSTRIES.	\$674,634,269	\$849,807,802	\$865,619,185	\$1,000,569,216.
Boots and shoes,	114,729,533	122,135,081	131,162,578	150,259,849.
Carpetings,	6,536,341	7,447,115	5,932,370	7,299,188
Cotton goods,	61,425,097	93,615,560	90,986,069	100,958,142
Leather,	*28,008,851	*25,694,407	23,161,557	28,632,317
Machines and machinery,	20,365,970	33,492,848	34,797,770	46,548,977
Metals and metallic goods, . . .	41,332,005	40,297,899	40,426,780	51,447,120
Paper,	†21,223,626	†27,955,024	22,212,555	23,731,926
Woollen goods,	31,748,278	29,370,963	30,359,533	33,331,731
Worsted goods,	11,198,148	20,975,996	25,664,722	32,540,301

* Includes Leather Goods.

† Includes Paper Goods.

The values shown in the first two columns of the above table are taken from the Census reports of 1885 and 1895 and cover the output of all the establishments engaged in manufacturing and mechanical industries in those years. For 1898 and 1899 the figures are estimates based upon the percentages of increase or decrease as shown by these annual reports, which, as has been previously pointed out, are derived from a considerable number of representative establishments making returns in each of the comparative years—1895, 1896; 1896, 1897; 1897, 1898; and 1898, 1899. In other words, had a complete census been taken in 1899, the aggregate value of goods made and work done in all the establishments would have approximated \$1,000,569,216, and the value of the product in each of the nine leading industries would have approximated the figures given in the last column of the table.

In order that comparison with 1895 may be made for the other industries of the State, we present in the next table the estimated value of goods made and work done in 1899, based upon the percentages of gain or loss shown since 1895.

by the establishments making return for these annual reports. In several instances the value for 1895 is omitted, the industries being indicated by an asterisk (*).

INDUSTRIES.	VALUE OF GOODS MADE AND WORK DONE	
	1895 (Actual)	1899 (Estimated)
Agricultural implements,	\$1,051,113	\$1,253,206
Arms and ammunition,	1,804,943	2,833,380
Artisans' tools,	3,046,393	4,191,979
Awnings, sails, tents, etc.,	601,158	603,765
Bicycles, tricycles, etc.,*	-	3,249,519
Boots and shoes,	122,135,081	150,259,849
Boxes, barrels, kegs, etc.,*	-	4,754,558
Boxes (paper),*	-	2,371,416
Brick, tiles, and sewer pipe,	2,077,099	1,599,550
Brooms, brushes, and mops,	1,431,492	1,691,331
Building materials,*	-	2,340,565
Burial cases, caskets, coffins, etc.,	454,320	394,867
Buttons and dress trimmings,	10,070,154	13,677,499
Carpetings,	7,447,115	7,299,188
Carriages and wagons,	11,797,326	11,687,800
Cement, kaolin, lime, and plaster,	482,907	345,962
Chemical preparations (compounded),	1,443,914	1,749,684
Clocks and watches,*	-	2,327,541
Clothing,	38,041,033	39,447,380
Cooking, lighting, and heating apparatus,	3,791,330	4,592,389
Cordage and twine,	5,272,609	8,960,041
Cotton goods,	93,615,560	100,958,142
Crayons, pencils, crucibles, etc.,	75,890	176,388
Drugs and medicines,	7,740,682	8,635,784
Dyestuffs,	934,277	880,667
Earthen, plaster, and stone ware,	240,441	213,821
Electrical apparatus and appliances,	6,273,904	9,866,957
Electroplating,	286,662	401,691
Emery and sand paper and cloth, etc.,	819,996	1,535,180
Fancy articles, etc.,	723,426	909,558
Fertilizers,	1,750,887	1,881,646
Fine arts and taxidermy,	41,112	64,237
Fireworks and matches,	150,510	143,989
Flax, hemp, and jute goods,	3,053,777	3,608,838
Food preparations,	84,331,352	100,024,141
Furniture,	15,280,896	14,509,483
Glass,	490,289	466,342
Glue, isinglass, and starch,	1,147,913	1,413,264
Hair work (animal and human),	559,928	573,403
Hose: rubber, linen, etc.,	1,205,820	1,017,487
Hosiery and knit goods,	6,146,799	5,924,407
Ink, mucilage, and paste,	564,078	741,479
Ivory, bone, shell, and horn goods, etc.,	1,242,929	2,083,945
Jewelry,*	-	11,543,429
Leather,*	-	28,632,317
Leather goods,*	-	4,045,960

INDUSTRIES.	VALUE OF GOODS MADE AND WORK DONE	
	1895 (Actual)	1899 (Estimated)
Liquors (bottled) and carbonated beverages,*	-	\$954,453
Liquors (malt),*	-	13,517,444
Liquors (distilled),*	-	1,495,830
Lumber,	\$4,400,556	5,932,916
Machines and machinery,	33,492,848	46,543,977
Metals and metallic goods,	40,297,899	51,447,120
Models, lasts, and patterns,	1,122,845	1,218,589
Musical instruments and materials,	6,774,218	7,400,626
Oils and illuminating fluids,	1,044,609	1,561,210
Paints, colors, and crude chemicals,	1,414,286	1,477,745
Paper,*	-	23,731,926
Paper goods,*	-	6,499,265
Perfumes, toilet articles, etc.,	309,584	225,868
Photographs and photographic materials,	1,747,470	2,114,217
Polishes and dressing,	1,989,572	2,447,751
Printing, publishing, and bookbinding,	23,341,640	29,401,941
Print works, dye works, and bleacheries,	24,134,756	27,509,367
Railroad construction and equipment,	4,632,250	6,823,849
Rubber and elastic goods,	24,967,119	25,940,548
Saddlery and harness,	2,168,810	2,408,456
Scientific instruments and appliances,	2,376,639	2,789,323
Shipbuilding,	1,656,308	2,397,879
Silk and silk goods,	4,041,399	6,174,366
Sporting and athletic goods,	662,898	706,842
Stone,	6,869,143	6,332,181
Straw and palm leaf goods,	5,626,638	5,356,980
Tallow, candles, soap, and grease,	4,267,577	4,071,066
Tobacco, snuff, and cigars,	4,563,069	4,873,242
Toys and games (children's),	806,950	991,611
Trunks and valises,	217,088	194,278
Whips, lashes, and stocks,	1,296,310	1,463,427
Wooden goods,*	-	9,587,231
Woollen goods,	29,370,963	33,331,731
Worsted goods,	20,975,996	32,540,301

Since 1895 a revised system of industry classification has been adopted so that certain industries show greater gains or losses than would, perhaps, be shown under the classification obtaining in 1899. For example, the industry designated as Bicycles, Tricycles, etc., was first shown in the report for 1896. Many of the establishments included in this industry were formerly classified under Carriages and Wagons and their withdrawal from that industry leaves the product value for 1899 for Carriages and Wagons nearly the same as in 1895. In that year, however, the value of bicycles and parts

and of bicycle repairing, as shown on page 492 of Volume V of the Census of 1895, was \$4,476,904, which, if deducted, leaves the amount of \$7,320,422 which may be accepted as the value of the goods made and work done in the carriage and wagon industry in 1895. Thus what seems at first glance to be a loss in this industry is, when analyzed, a gain. The loss in 1899 shown for Bicycles, Tricycles, etc., is undoubtedly due to the combination of the several bicycle factories and the consequent shutting down of one or two of the largest.

Boxes, Barrels, Kegs, etc., is also a new classification. In 1895 it was termed "Boxes (Paper and Wooden)." Acting upon the suggestion that the combination of boxes, barrels, and other packages would prove of more benefit to the trade interested in this class of product, the industry head was changed in 1897 and paper boxes were included under the heading of "Boxes (Paper) and Paper Goods," the latter being withdrawn from the industry then known as Paper and Paper Goods. Still further division has since been made and the manufacture of paper boxes and paper goods are now presented as separate industries. Wooden Goods was drawn upon to create the industry Boxes, Barrels, Kegs, etc., and the industry now called Building Materials. The value of product in 1895 may be estimated as follows from the figures of that year: Boxes, Barrels, Kegs, etc., \$4,687,182; Boxes (Paper), \$2,480,666; Paper Goods, \$6,041,733; Wooden Goods, \$6,891,624; and Building Materials, \$1,161,743.

In 1898, the value of the jewelry manufactured was withdrawn from the industry "Clocks, Watches, and Jewelry" and presented by itself. In 1895 the value of jewelry manufactured was \$6,193,918. In former years, the industry classification "Leather" included not only the establishments engaged in the manufacture of leather from hides and skins but the establishments manufacturing goods from the completed leather; the latter are now shown separately under the industry head of Leather Goods; the value of leather goods made in 1895 is estimated as \$2,150,800.

The industry classifications of "Liquors and Beverages (Not Spirituous)" and "Liquors: Malt, Distilled, and Fermented"

have been revised and now include, under the head of "Liquors (Bottled) and Carbonated Beverages," those establishments which manufacture carbonated beverages and tonics, and also bottle liquors which are purchased in bulk. The establishments making ale, beer, and porter are also presented separately from those which manufacture rum, gin, etc. The value of the product of these three industries in 1895 is estimated as follows: Liquors (Bottled) and Carbonated Beverages, \$1,029,356; Liquors (Malt), \$10,657,795; and Liquors (Distilled), \$2,987,584.

In the following table is shown the increase (+), decrease (—), or no change (=) in 1899 as compared with 1898 in the amount of capital invested, the value of product, the average number of persons employed, the total amount paid in wages, the average number of days in operation, and the average proportion of business done:

INDUSTRIES.	INCREASE (+), DECREASE (—), OR NO CHANGE (=) IN 1899 AS COMPARED WITH 1898 IN —					
	Capital	Product	Persons	Wages	Days	Pro- portion
Agricultural implements,	+	+	+	+	+	+
Arms and ammunition,	+	+	+	+	+	+
Artisans' tools,	+	+	+	+	+	+
Awnings, sails, tents, etc.,	+	+	+	+	+	+
Bicycles, tricycles, etc.,	—	—	—	—	—	+
Boots and shoes,	+	+	+	+	+	+
Boots and shoes (factory product),	+	+	+	+	+	+
Soles, heels, and cut stock,	+	+	+	+	+	+
Boot and shoe findings,	+	+	+	+	—	+
Stitching, heeling, etc.,	+	+	+	+	+	+
Boxes, barrels, kegs, etc.,	+	+	+	+	+	+
Boxes (paper),	+	+	+	+	+	+
Brick, tiles, and sewer pipe,	—	+	—	+	+	+
Brooms, brushes, and mops,	—	+	+	+	+	+
Building materials,	+	+	+	+	+	+
Burial cases, caskets, coffins, etc.,	+	—	—	—	—	—
Buttons and dress trimmings,	+	+	+	+	+	+
Carpetings,	+	+	+	+	+	+
Textile,	+	+	+	+	+	+
Other,	—	+	+	+	—	+
Carriages and wagons,	+	+	+	+	+	+
Cement, kaolin, lime, and plaster,	+	+	+	+	+	—
Chemical preparations (compounded),	—	+	+	+	—	—
Clocks and watches,	—	+	+	+	+	+
Clothing,	+	+	+	+	+	+
Cooking, lighting, and heating apparatus,	+	+	+	+	+	+

INDUSTRIES.	INCREASE (+), DECREASE (-), OR NO CHANGE (=) IN 1899 AS COMPARED WITH 1898 IN -					
	Capital	Product	Persons	Wages	Days	Pro- portion
Cordage and twine,	+	+	+	+	+	+
Cotton goods,	+	+	+	+	+	+
Cotton goods (woven),	+	+	+	+	+	+
Cotton yarn and thread,	+	-	+	+	+	+
Cotton waste,	+	+	+	+	-	+
Crayons, pencils, crucibles, etc.,	+	+	+	+	-	=
Drugs and medicines,	+	-	+	+	+	+
Dyestuffs,	+	+	-	+	+	-
Earthen, plaster, and stone ware,	+	+	-	+	+	-
Electrical apparatus and appliances,	+	+	+	+	+	+
Electroplating,	+	+	+	+	-	+
Emery and sand paper and cloth, etc.,	+	+	+	+	+	+
Fancy articles, etc.,	+	+	+	+	-	-
Fertilizers,	-	+	+	-	-	+
Fine arts and taxidermy,	+	+	+	-	+	+
Fireworks and matches,	+	-	-	-	-	-
Flax, hemp, and jute goods,	-	+	+	+	+	+
Food preparations,	-	+	+	+	+	+
Furniture,	+	+	+	+	+	+
Glass,	+	+	+	+	+	+
Glue, isinglass, and starch,	+	+	+	+	+	-
Hair work (animal and human),	+	+	+	+	+	+
Hose: rubber, linen, etc.,	+	-	-	-	-	-
Hosiery and knit goods,	+	+	+	+	+	+
Ink, mucilage, and paste,	-	+	+	+	+	+
Ivory, bone, shell, and horn goods, etc.,	+	+	+	+	-	+
Jewelry,	+	+	+	+	+	+
Leather,	+	+	+	+	+	+
Leather goods,	+	+	+	+	-	+
Liquors (bottled) and carbonated beverages,	-	+	+	-	-	-
Liquors (malt),	+	+	-	-	+	-
Liquors (distilled),	+	+	+	+	+	+
Lumber,	-	+	+	+	+	+
Machines and machinery,	+	+	+	+	+	+
Metals and metallic goods,	+	+	+	+	+	+
Models, lasts, and patterns,	-	+	+	+	+	+
Musical instruments and materials,	+	+	+	+	+	+
Oils and illuminating fluids,	+	+	+	+	-	+
Paints, colors, and crude chemicals,	+	+	+	+	+	+
Paper,	+	+	+	+	+	+
Paper goods,	+	+	+	+	-	+
Perfumes, toilet articles, etc.,	-	-	+	+	+	-
Photographs and photographic materials,	+	+	-	-	-	+
Polishes and dressing,	+	+	+	+	-	-

INDUSTRIES.	INCREASE (+), DECREASE (-), OR NO CHANGE (=) IN 1899 AS COMPARED WITH 1898 IN -					
	Capital	Product	Persons	Wages	Days	Pro- portion
Printing, publishing, and bookbinding, .	+	+	+	+	+	+
Print works, dye works, and bleacheries, .	+	+	+	+	+	+
Railroad construction and equipment, .	+	+	+	+	+	+
Rubber and elastic goods,	+	+	-	-	+	+
Saddlery and harness,	+	+	+	+	+	+
Scientific instruments and appliances, .	+	+	+	+	-	+
Shipbuilding,	+	+	+	+	-	+
Silk and silk goods,	+	+	+	+	+	+
Sporting and athletic goods,	+	+	+	+	+	+
Stone,	+	+	-	-	-	+
Quarried,	+	-	-	-	-	+
Cut and monumental,	+	+	+	+	-	+
Straw and palm leaf goods,	-	-	-	-	-	-
Tallow, candles, soap, and grease, . . .	+	+	+	+	+	+
Tobacco, snuff, and cigars,	-	+	+	+	+	+
Toys and games (children's),	+	+	+	+	-	-
Trunks and valises,	+	+	+	+	+	+
Whips, lashes, and stocks,	+	+	+	+	+	+
Wooden goods,	-	+	+	+	+	+
Woollen goods,	+	+	+	+	+	-
Woven goods and yarn,	+	+	+	+	+	-
Shoddy, waste, etc.,	+	+	+	+	+	+
Worsted goods,	+	+	+	+	+	+
ALL INDUSTRIES,	+	+	+	+	+	+

All Industries, in the aggregate, shows an increase in each of the elements considered. The same is true for

Agricultural Implements.
Arms and Ammunition.
Artisans' Tools.
Awnings, Sails, Tents, etc.
Boots and Shoes (aggregate).
Boots and Shoes (Factory Product).
Boots and Shoes (Soles, Heels, and Cut Stock).
Boots and Shoes (Stitching, Heeling, etc.).
Boxes, Barrels, Kegs, etc.
Boxes (Paper).
Building Materials.
Buttons and Dress Trimmings.
Carpetings (aggregate).
Carpetings (Textile).

Carriages and Wagons.
Clothing.
Cooking, Lighting, and Heating Apparatus.
Cordage and Twine.
Cotton Goods (aggregate).
Cotton Goods (Woven).
Electrical Apparatus and Appliances.
Emery and Sand Paper and Cloth, etc.
Furniture.
Glass.
Hair Work (Animal and Human).
Hosiery and Knit Goods.
Jewelry.

Leather.	Railroad Construction and Equip- ment.
Liquors (Distilled).	Saddlery and Harness.
Machines and Machinery.	Silk and Silk Goods.
Metals and Metallic Goods.	Sporting and Athletic Goods.
Musical Instruments and Materials.	Tallow, Candles, Soap, and Grease.
Paints, Colors, and Crude Chemicals.	Trunks and Valises.
Paper.	Whips, Lashes, and Stocks.
Printing, Publishing, and Bookbind- ing.	Woollen Goods (Shoddy, Waste, etc.).
Print Works, Dye Works, and Bleacheries.	Worsted Goods.

Only one industry, namely, Straw and Palm Leaf Goods, shows a decrease in each of the elements considered.

The value of goods made and work done as given on pages 95 and 96 is the manufacturers' selling price. This value involves duplications to the extent that the product of one industry within the State is consumed as the stock of another industry also within the State. If, to take a familiar example, \$25,000 worth of leather appears as part of the value of the output in the leather industry and this same product was consumed as stock in the boot and shoe industry, it would swell the value of the boot and shoe product of the State by substantially that amount. Duplications of this kind, however, cannot be avoided in taking the product, nor, from one point of view should they be considered.

Every time the goods are "turned over," they become a factor in industrial operations, wages and profits accruing from the process, and the values involved represent in their entirety the magnitude of the manufacturing operations of the State. Nevertheless it should not be assumed that the aggregate value of goods made and work done represents the value actually created or brought into being through these operations during any year.

In order to show the result of the productive forces we present a table showing what may be termed the "Industry Product" in the nine leading industries, as distinguished from the normal value of goods made and work done, together with the "Profit and Minor Expense Fund."

INDUSTRIES.	Value of Goods Made	Value of Stock Used	Industry Product	Paid in Wages	Profit and Minor Expense Fund
Boots and shoes,	\$122,695,311	\$78,182,005	\$44,513,306	\$26,286,669	\$18,226,637
Carpetings,	7,402,998	4,313,990	3,089,008	1,702,290	1,386,718
Cotton goods,	97,177,254	50,092,441	47,084,813	29,371,656	17,713,157
Leather,	23,696,046	18,381,998	5,314,048	2,713,878	2,600,170
Machines and machinery, .	36,619,659	13,441,050	23,178,609	11,968,298	11,210,311
Metals and metallic goods, .	30,216,235	15,581,749	14,634,486	7,815,634	6,818,852
Paper,	21,371,544	11,763,291	9,608,253	3,947,134	5,661,119
Woollen goods,	34,221,089	19,491,202	14,729,887	7,200,777	7,529,110
Worsted goods,	32,428,873	19,402,627	13,026,246	5,442,321	7,583,925

In the above table, the value of goods made and the value of stock and materials used are shown in the first two columns. The industry product is given in the third column and is obtained by subtracting from the value of goods made and work done the value of stock used. The fifth column of the table shows the profit and minor expense fund, which is obtained by subtracting from the industry product the amount paid out in wages. Industry product represents the actual result of the productive forces in the industry, that is, the added value created above the value of stock and materials consumed by the union of labor and capital. In the division of the proceeds of each industry, one part of this industry product is paid to the labor force in the form of wages, this being labor's direct share of the product. The balance constitutes a fund from which are paid freights, insurance, interest on loans (credit capital), interest on stock (fixed or invested capital), rents, commissions, salaries, etc. ; in fact, all expenses other than those for stock and wages. The remainder, if any, is the profit of the employer. The entire balance of the industry product remaining after the deduction of the amount paid in wages, becomes a "Profit and Minor Expense Fund," and is thus designated in the table. Of course, it will be understood that the term "Minor Expense" is relative. The expenses, some of which we have enumerated, paid out of this balance, are in themselves considerable in amount, and are only to be classed as "Minor" in comparison with the generally larger amounts expended for materials (stock) and wages.

The next table presents the actual product per \$1,000 of capital invested in each of the nine leading industries, with

the average product per employé, the percentages of industry product paid in wages, and the percentages devoted to other expenses for the year 1899.

INDUSTRIES.	Capital Invested	Average Persons Employed	INDUSTRY PRODUCT		PERCENTAGES OF INDUSTRY PRODUCT	
			Per \$1,000 of Capital	Average per Employé	Devoted to Profit and Minor Expenses	Paid in Wages
Boots and shoes, . . .	\$26,728,316	56,043	\$1,665.40	\$794.27	40.95	59.05
Carpetings, . . .	6,630,869	4,563	465.85	676.97	44.89	55.11
Cotton goods, . . .	126,159,262	88,490	373.22	532.09	37.62	62.38
Leather, . . .	6,755,499	5,769	786.63	921.14	48.93	51.07
Machines and machinery, . . .	35,178,135	21,593	658.89	1,073.43	48.36	51.64
Metals and metallic goods, . . .	18,992,728	15,298	770.53	956.63	46.59	53.41
Paper, . . .	20,663,683	9,154	464.98	1,049.62	58.92	41.08
Woollen goods, . . .	28,416,883	19,206	518.35	766.94	51.11	48.89
Worsted goods, . . .	18,372,545	15,003	709.01	868.24	58.22	41.78

The efficiency of the capital invested in these industries during 1899 is shown in the third column of the table, the largest product per \$1,000 of capital invested being found in Boots and Shoes, namely, \$1,665.40. No other industry approaches this figure; the nearest to it, however, is Leather, the industry product per \$1,000 of invested capital being \$786.63. The lowest industry product is found in Cotton Goods, and is \$373.22 for each \$1,000 of capital invested. The fourth column shows the efficiency of labor. With respect to this point, the industries Machines and Machinery and Paper head the list, the average industry product per employé being \$1,073.43 and \$1,049.62, respectively. The lowest industry product per employé is found in Cotton Goods, the average being \$532.09.

When the percentage of industry product paid in wages is considered, we find that Cotton Goods leads, the percentage being 62.38. Next ranks Boots and Shoes, the percentage being 59.05, followed in turn by Carpetings, Metals and Metallic Goods, Machines and Machinery, Leather, Woollen Goods, Worsted Goods, and Paper. The percentages of industry product paid in wages are the complements of the percentages of industry product devoted to profit and minor expenses, these two items aggregating 100 per cent, or the whole of the industry product.

Below we compare the rank of the different industries in 1899 as regards the amount of industry product per \$1,000 of capital, with the rank of the same industries for 1898 as derived from the report on Annual Statistics of Manufactures for that year.

1898.	1899.
Boots and Shoes.	Boots and Shoes.
Metals and Metallic Goods.	Leather.
Leather.	Metals and Metallic Goods.
Worsted Goods.	Worsted Goods.
Machines and Machinery.	Machines and Machinery.
Woollen Goods.	Woollen Goods.
Paper.	Carpetings.
Cotton Goods.	Paper.
Carpetings.	Cotton Goods.

In the above comparison Boots and Shoes, Worsted Goods, Machines and Machinery, and Woollen Goods retain the rank in 1899 held in 1898. Leather and Metals and Metallic Goods change places while Carpetings rises from ninth to seventh place, Paper falls from seventh to eighth, and Cotton Goods from eighth to ninth in 1899.

With respect to the average industry product per employé, the rank of the industries in each of the years appears as follows :

1898.	1899.
Paper.	Machines and Machinery.
Machines and Machinery.	Paper.
Metals and Metallic Goods.	Metals and Metallic Goods.
Leather.	Leather.
Boots and Shoes.	Worsted Goods.
Worsted Goods.	Boots and Shoes.
Woollen Goods.	Woollen Goods.
Carpetings.	Carpetings.
Cotton Goods.	Cotton Goods.

The only change occurring in 1899 was the exchange of position of Machines and Machinery and Paper, and that of Worsted Goods and Boots and Shoes.

The next comparison relates to the percentage of industry product paid in wages, the industries ranking as follows :

1898.**1899.**

Cotton Goods.
 Carpetings.
 Boots and Shoes.
 Woollen Goods.
 Leather.
 Metals and Metallic Goods.
 Machines and Machinery.
 Worsted Goods.
 Paper.

Cotton Goods.
 Boots and Shoes.
 Carpetings.
 Metals and Metallic Goods.
 Machines and Machinery.
 Leather.
 Woollen Goods.
 Worsted Goods.
 Paper.

The only industries retaining the same rank in both years were Cotton Goods, Worsted Goods, and Paper, all of the others changing their relative positions. Boots and Shoes rose from third to second place, Carpetings fell from second to third, Metals and Metallic Goods rose from sixth to fourth, Machines and Machinery from seventh to fifth, Leather fell from fifth to sixth, and Woollen Goods from fourth to seventh.

In this connection we present a series of separate tables for the nine leading industries for 1898 and 1899, bringing forward for that purpose data contained in the tables on pages 158 and 159.

The first presentation relates to Boots and Shoes.

Boots and Shoes. [Comparisons for 688 Establishments.]

CLASSIFICATION.	1898	1899
Amount of capital invested,	\$22,139,915	\$26,728,316
Value of goods made and work done (gross product),	\$107,103,875	\$122,695,311
Value of stock used and other materials consumed in production, .	\$67,017,570	\$78,182,005
Industry product (gross product less value of stock and materials),	\$40,086,305	\$44,513,306
Wages (labor's direct share of product),	\$23,797,338	\$26,286,669
Profit and minor expense fund (Industry product less wages), .	\$16,288,967	\$18,226,637
Percentage of industry product paid in wages,	59.37	59.05
Percentage of industry product devoted to profit and minor expenses,	40.63	40.95
Percentage of profit and minor expense fund of capital invested, .	73.57	68.19

The percentages of industry product paid in wages in 1898 and 1899 were 59.37 and 59.05, respectively, a decrease in the last named year. The percentage of industry product devoted to profit and minor expenses shows an increase, being 40.63 in 1898, and 40.95 in 1899. The percentage which this profit and minor expense fund forms of capital invested is 73.57 in

1898, falling to 68.19 in 1899; that is to say, a smaller proportion of the amount remaining in this industry after eliminating the cost of stock was devoted to wages in 1899 than in 1898, leaving a slightly larger amount for the payment of expenses (other than wages and stock) and for profit, and this amount formed a smaller percentage of the total capital invested in the industry in 1899 than in 1898.

A similar comparison for Carpetings follows:

Carpetings. [Comparisons for 12 Establishments.]

CLASSIFICATION.	1898	1899
Amount of capital invested,	\$6,582,652	\$6,630,369
Value of goods made and work done (gross product),	\$6,016,943	\$7,402,998
Value of stock used and other materials consumed in production,	\$3,639,475	\$4,313,990
Industry product (gross product less value of stock and materials),	\$2,377,468	\$3,089,008
Wages (labor's direct share of product),	\$1,431,921	\$1,702,290
Profit and minor expense fund (industry product less wages),	\$945,547	\$1,386,718
Percentage of industry product paid in wages,	60.23	55.11
Percentage of industry product devoted to profit and minor expenses,	39.77	44.89
Percentage of profit and minor expense fund of capital invested,	14.36	20.91

The percentage of industry product paid in wages in this industry was 60.23 in 1898, and 55.11 in 1899; deducting wages, the fund devoted to profit and minor expenses rose from 39.77 in 1898 to 44.89 in 1899, and this fund formed 20.91 per cent of the capital invested in 1899 as against 14.36 per cent in 1898.

The next table presents a comparison for Cotton Goods.

Cotton Goods. [Comparisons for 158 Establishments.]

CLASSIFICATION.	1898	1899
Amount of capital invested,	\$111,805,794	\$126,159,262
Value of goods made and work done (gross product),	\$87,580,244	\$97,177,254
Value of stock used and other materials consumed in production,	\$46,769,141	\$50,092,441
Industry product (gross product less value of stock and materials),	\$40,811,103	\$47,084,813
Wages (labor's direct share of product),	\$26,116,007	\$29,371,656
Profit and minor expense fund (industry product less wages),	\$14,695,096	\$17,713,157
Percentage of industry product paid in wages,	63.99	62.38
Percentage of industry product devoted to profit and minor expenses,	36.01	37.62
Percentage of profit and minor expense fund of capital invested,	13.14	14.04

In this industry, the percentage of industry product paid in wages fell from 63.99 in 1898 to 62.38 in 1899. Of course, the percentage of industry product devoted to profit and minor expenses correspondingly increased, being 36.01 in 1898 and 37.62 in 1899. The profit and minor expense fund formed 13.14 per cent of capital invested in 1898 and 14.04 per cent in 1899.

The next table relates to Leather.

Leather. [Comparisons for 96 Establishments.]

CLASSIFICATION.	1898	1899
Amount of capital invested,	\$6,241,216	\$6,755,499
Value of goods made and work done (gross product),	\$19,169,103	\$23,696,046
Value of stock used and other materials consumed in production, .	\$14,673,592	\$18,381,998
Industry product (gross product less value of stock and materials),	\$4,495,511	\$5,314,048
Wages (labor's direct share of product),	\$2,482,430	\$2,713,878
Profit and minor expense fund (industry product less wages), .	\$2,013,081	\$2,600,170
Percentage of industry product paid in wages,	55.22	51.07
Percentage of industry product devoted to profit and minor expenses,	44.78	48.93
Percentage of profit and minor expense fund of capital invested, .	32.25	38.49

Like each of the preceding industries, Leather also shows a decrease in the percentage of industry product paid in wages, namely, 51.07 in 1899 as compared with 55.22 in 1898. The percentage of industry product devoted to profit and minor expenses shows an increase from 44.78 in 1898 to 48.93 in 1899, and the percentage which this fund formed of the capital invested rose from 32.25 in 1898 to 38.49 in 1899.

The next table presents a comparison for Machines and Machinery.

Machines and Machinery. [Comparisons for 358 Establishments.]

CLASSIFICATION.	1898	1899
Amount of capital invested,	\$32,721,191	\$35,178,135
Value of goods made and work done (gross product),	\$27,374,142	\$36,619,659
Value of stock used and other materials consumed in production, .	\$9,467,633	\$13,441,050
Industry product (gross product less value of stock and materials),	\$17,906,509	\$23,178,609
Wages (labor's direct share of product),	\$9,582,762	\$11,968,298
Profit and minor expense fund (industry product less wages), .	\$8,323,747	\$11,210,311
Percentage of industry product paid in wages,	53.52	51.64
Percentage of industry product devoted to profit and minor expenses,	46.48	48.36
Percentage of profit and minor expense fund of capital invested, .	25.44	31.87

The percentage of industry product paid in wages in this industry fell from 53.52 in 1898 to 51.64 in 1899, while the percentage of industry product devoted to profit and minor expenses rose from 46.48 in 1898 to 48.36 in 1899. An increase is also found in the percentage of profit and minor expense fund of capital invested, namely, 25.44 in 1898 as against 31.87 in 1899.

A comparison for Metals and Metallic Goods follows :

Metals and Metallic Goods. [Comparisons for 393 Establishments.]

CLASSIFICATION.	1898	1899
Amount of capital invested,	\$17,543,554	\$18,992,728
Value of goods made and work done (gross product),	\$23,743,665	\$30,216,235
Value of stock used and other materials consumed in production, .	\$10,930,871	\$15,581,749
Industry product (gross product less value of stock and materials),	\$12,812,794	\$14,634,486
Wages (labor's direct share of product),	\$6,822,620	\$7,815,634
Profit and minor expense fund (industry product less wages), . .	\$5,990,174	\$6,818,852
Percentage of industry product paid in wages,	53.25	53.41
Percentage of industry product devoted to profit and minor expenses,	46.75	46.59
Percentage of profit and minor expense fund of capital invested, .	34.14	35.90

This industry is the only one of the nine leading industries which shows an increase in the percentage of industry product paid in wages; but the gain is slight, the percentages being 53.25 in 1898 and 53.41 in 1899. A corresponding decrease is found in the percentage of industry product devoted to profit and minor expenses, which fell from 46.75 in 1898 to 46.59 in 1899. The percentage of profit and minor expense fund of capital invested rose from 34.14 in 1898 to 35.90 in 1899.

The facts for Paper are shown in the next table.

Paper. [Comparisons for 80 Establishments.]

CLASSIFICATION.	1898	1899
Amount of capital invested,	\$19,655,162	\$20,663,683
Value of goods made and work done (gross product),	\$20,003,537	\$21,371,544
Value of stock used and other materials consumed in production, .	\$11,090,241	\$11,763,291
Industry product (gross product less value of stock and materials),	\$8,913,296	\$9,608,253
Wages (labor's direct share of product),	\$3,783,139	\$3,947,134
Profit and minor expense fund (industry product less wages), . .	\$5,130,157	\$5,661,119
Percentage of industry product paid in wages,	42.44	41.08
Percentage of industry product devoted to profit and minor expenses,	57.56	58.92
Percentage of profit and minor expense fund of capital invested, .	26.10	27.40

In this industry, the percentage of industry product paid in wages fell from 42.44 in 1898 to 41.08 in 1899, while the percentage of industry product devoted to profit and minor expenses rose from 57.56 in 1898 to 58.92 in 1899, accompanied by an increase in the percentage of profit and minor expense fund of capital invested which rose from 26.10 in 1898 to 27.40 in 1899.

The next table relates to Woollen Goods.

Woollen Goods. [Comparisons for 138 Establishments.]

CLASSIFICATION.	1898	1899
Amount of capital invested,	\$26,227,676	\$28,416,883
Value of goods made and work done (gross product),	\$31,170,882	\$34,221,089
Value of stock used and other materials consumed in production,	\$18,752,309	\$19,491,202
Industry product (gross product less value of stock and materials),	\$12,418,573	\$14,729,887
Wages (labor's direct share of product),	\$7,085,432	\$7,200,777
Profit and minor expense fund (industry product less wages),	\$5,333,141	\$7,529,110
Percentage of industry product paid in wages,	57.06	48.89
Percentage of industry product devoted to profit and minor expenses,	42.94	51.11
Percentage of profit and minor expense fund of capital invested,	20.33	26.50

In this industry, a falling off is also noted in the percentage of industry product paid in wages, the decline being from 57.06 in 1898 to 48.89 in 1899, matched by a corresponding increase in the percentage of industry product devoted to profit and minor expenses, which rose from 42.94 in 1898 to 51.11 in 1899. The percentage which the profit and minor expense fund formed of capital invested also shows an increase, rising from 20.33 in 1898 to 26.50 in 1899.

The final table relates to Worsted Goods.

Worsted Goods. [Comparisons for 34 Establishments.]

CLASSIFICATION.	1898	1899
Amount of capital invested,	\$17,542,193	\$18,372,545
Value of goods made and work done (gross product),	\$25,577,035	\$32,428,873
Value of stock used and other materials consumed in production,	\$15,752,486	\$19,402,627
Industry product (gross product less value of stock and materials),	\$9,824,549	\$13,026,246
Wages (labor's direct share of product),	\$4,778,279	\$5,442,321
Profit and minor expense fund (industry product less wages),	\$5,046,270	\$7,583,925
Percentage of industry product paid in wages,	48.64	41.79
Percentage of industry product devoted to profit and minor expenses,	51.36	58.21
Percentage of profit and minor expense fund of capital invested,	28.77	41.20

In this industry, a decrease in the percentage of industry product paid in wages is found; this percentage was 48.64 in 1898, and 41.79 in 1899. The percentage of industry product devoted to profit and minor expenses increased from 51.36 in 1898 to 58.21 in 1899, and the percentage of profit and minor expense fund of capital invested rose from 28.77 in 1898 to 41.20 in 1899.

On the basis of the reports made by 4,740 representative establishments, the following condensed general statements may be made regarding the manufacturing and mechanical industries in the Commonwealth for the years 1898 and 1899 :

CAPITAL INVESTED.

The increase in capital devoted to production in 1899 as compared with 1898 in All Industries amounted to 8.72 per cent. In connection with this statement, however, it should be remembered that this does not necessarily imply an investment of more money in productive enterprises; and when taken in conjunction with the other facts relative to the condition of the industries during the year, it is apparent that, while a statistical increase is shown, the increase may be due to the large amount of stock on hand and in the process of manufacture or to some of the items classed as capital other than cash, as explained in the statement on page 90.

In the nine leading industries, representing 64.86 per cent of the total capital, as returned in 1899, the following facts appear: In 1899 an increase of capital is shown in Boots and Shoes of 20.72 per cent; Carpetings, 0.73 per cent; Cotton Goods, 12.84 per cent; Leather, 8.24 per cent; Machines and Machinery, 7.51 per cent; Metals and Metallic Goods, 8.26 per cent; Paper, 5.13 per cent; Woollen Goods, 8.35 per cent, and Worsted Goods, 4.73 per cent. The percentage of increase in the nine leading industries, in the aggregate, is 10.53 per cent.

STOCK USED.

In All Industries considered in the aggregate, the value of stock used in 1899 shows an increase, as compared with 1898,

of 17.10 per cent. In the nine leading industries, the value of stock used in which amounted to 55.06 per cent of the aggregate value of stock used as returned in 1899, increases appear as follows: Boots and Shoes, 16.66 per cent; Carpetings, 18.53 per cent; Cotton Goods, 7.11 per cent; Leather, 25.27 per cent; Machines and Machinery, 41.97 per cent; Metals and Metallic Goods, 42.55 per cent; Paper, 6.07 per cent; Woollen Goods, 3.94 per cent, and Worsted Goods, 23.17 per cent. The aggregate increase in the value of stock used in the nine leading industries in 1899 as compared with 1898 is 16.44 per cent.

GOODS MADE.

The aggregate value of goods made and work done in All Industries in 1899 as compared with 1898 shows an increase of 15.59 per cent. In each of the nine leading industries, which in the aggregate represent 55.49 per cent of the total value of goods made and work done as returned by the 4,740 establishments in 1899, the increase is as follows: Boots and Shoes, 14.56 per cent; Carpetings, 23.04 per cent; Cotton Goods, 10.96 per cent; Leather, 23.62 per cent; Machines and Machinery, 33.77 per cent; Metals and Metallic Goods, 27.26 per cent; Paper, 6.84 per cent; Woollen Goods, 9.79 per cent, and Worsted Goods, 26.79 per cent. The aggregate for the nine leading industries in 1899 as compared with 1898 is 16.70 per cent.

PERSONS EMPLOYED.

The increase in the average number of persons employed in All Industries in 1899 as compared with 1898 is 31,557 persons, or 9.58 per cent. An increase is also shown in the smallest number of persons employed of 38,347 persons, or 14.28 per cent; while the number of persons employed at periods of employment of the greatest number shows an increase of 31,178 persons, or 8.15 per cent, the range of unemployment being narrower in 1899 than in 1898 by 7,169 persons, or 6.29 per cent. In each of the nine leading industries an increase in the average number of persons employed appears, the percentages being: Boots and Shoes, 8.35; Carpetings, 8.57; Cotton Goods, 9.44; Leather, 8.11; Machines and Machinery, 24.05; Metals and Metallic Goods,

13.40; Paper, 2.37; Woollen Goods, 0.49, and Worsted Goods, 13.56. The percentage of increase for the nine industries, in the aggregate, is 9.73. The average number of males employed in All Industries increased 10.60 per cent, and females 7.63 per cent.

WAGES PAID.

The total amount paid in wages in the 4,740 establishments, represented in the 88 industries, increased 11.61 per cent in 1899 as compared with 1898. In the nine leading industries the following percentages of increase appear: Boots and Shoes, 10.46; Carpetings, 18.88; Cotton Goods, 12.47; Leather, 9.32; Machines and Machinery, 24.89; Metals and Metallic Goods, 14.55; Paper, 4.33; Woollen Goods, 1.63, and Worsted Goods, 13.90. The increase for the nine leading industries, in the aggregate, is 12.31 per cent. The average yearly earnings per individual, without regard to sex or age, employed in the 88 industries, was \$419.91 in 1898, and \$427.71 in 1899, an increase of \$7.80, or 1.86 per cent in the latter year. The range from highest to lowest average yearly earnings was from \$795.20 to \$300.96 in 1898, and from \$795.87 to \$314 in 1899. The higher earnings rule in the industries demanding greater skill and employing males chiefly, and the lower in factory industries employing a large proportion of females and young persons. The estimated average amount earned during 1899 for males is \$523.34; females, \$324.72; and young persons, \$219.34.

WORKING TIME AND PROPORTION OF BUSINESS DONE.

Each of the employes worked on an average 286.27 days in 1898, and 294.14 days in 1899, an increase of 7.87 days, or 2.75 per cent. The average proportion of business done reached 61.67 per cent in 1898, and 66.21 per cent in 1899 of the full productive capacity of the 4,740 establishments, an increase of 7.36 per cent in the latter year.



